ORDER NO. AD8906191C8

Service Manual

QUARTZ Synthesizer MW/LW/FM
Stereo Radio with Double Cassette
Tape Deck and Record Player

Stereo Music System
SG-HM30L

Color

(K)...Black Type

Area

Country Code	Area	Color
(E)	Continental Europe.	(K)
(EB)	Great Britain.	(K)
(GN)	Oceania.	(K)

SPECIFICATIONS

■ AMPLIFIER SECTION

MPO	2×10 W (THD 10%, 4 Ω)
Input sensitivity and impedance	
CD	250 mV/18 kΩ
AUX	150 mV/12 kΩ
Graphic equalizer frequency	100 Hz, 330 Hz, 1 kHz, 3.3 kHz, 10 kHz, ±10 dB
Load impedance	4 Ω~16 Ω
Loudness control (volume at −30 dB)	100 Hz, +10 dB

■ FM TUNER SECTION

Frequency range	87.50~108.00 MHz (0.05 MHz steps)
Sensitivity	25.2 dBf, (5 µV, IHF'58)
S/N 26 dB	3.8 µV (40 kHz mod., 75 Ω)
Total harmonic distortion	
1 kHz MONO	0.3%
STEREO	0.5%
S/N	
MONO	60 dB (65 dB, IHF)
Image rejection at 98 MHz	35 dB
Stereo separation	
1 kHz	35 dB
Antenna terminals	75 Ω (unbalanced)

■ AM TUNER SECTION

Frequency range	
MW	522~1611 kHz (9 kHz steps) 530~1620 kHz (10 kHz steps)
LW	155~353 kHz (9 kHz steps) 153~351 kHz (−2 kHz shift)
Sensitivity (for 50 mW)	
MW	200 µV/m (999 kHz)
LW	500 µV/m (254 kHz)

■ CASSETTE DECK SECTION

Deck system	Full auto stop double cassette system
Track system	4-track, 2-channel
Heads	
(tape deck 1) Play	Solid permalloy head
(tape deck 2) Rec/play	Solid permalloy head
Erasing	Double-gap ferrite head
Motors	DC servo motor
Recording system	AC bias
Erasing system	AC erase
Tape speed	4.8 cm/sec. (1-7/8 ips)
Frequency response	
NORMAL	50 Hz~12 kHz (DIN)
S/N	50 dB (A-WTD)
Wow and flutter	0.15% (WRMS)

■ PHONO SECTION

Player system	Belt Drive Automatic Turntable
Phono motor	DC servo motor
Turntable size	28 cm (11")
Turntable speeds	33-1/3 rpm, 45 rpm
Cartridge type	Ceramic
Stylus	Sapphire (Part No. EPS-41ST)
Stylus pressure	5.5 g

■ GENERAL

Power consumption	51 W
Power supply	
For continental Europe	AC 50 Hz/60 Hz, 220 V
For Great Britain and Oceania	AC 50 Hz/60 Hz, 240 V
Dimensions (W×H×D)	360×323×370 mm (14−3/16"×12−23/32"×14−9/16")
Weight	5.5 kg (12.1 lb.)

Note: Specifications are subject to change without notice.
Weight and dimensions are approximate.

Panasonic®

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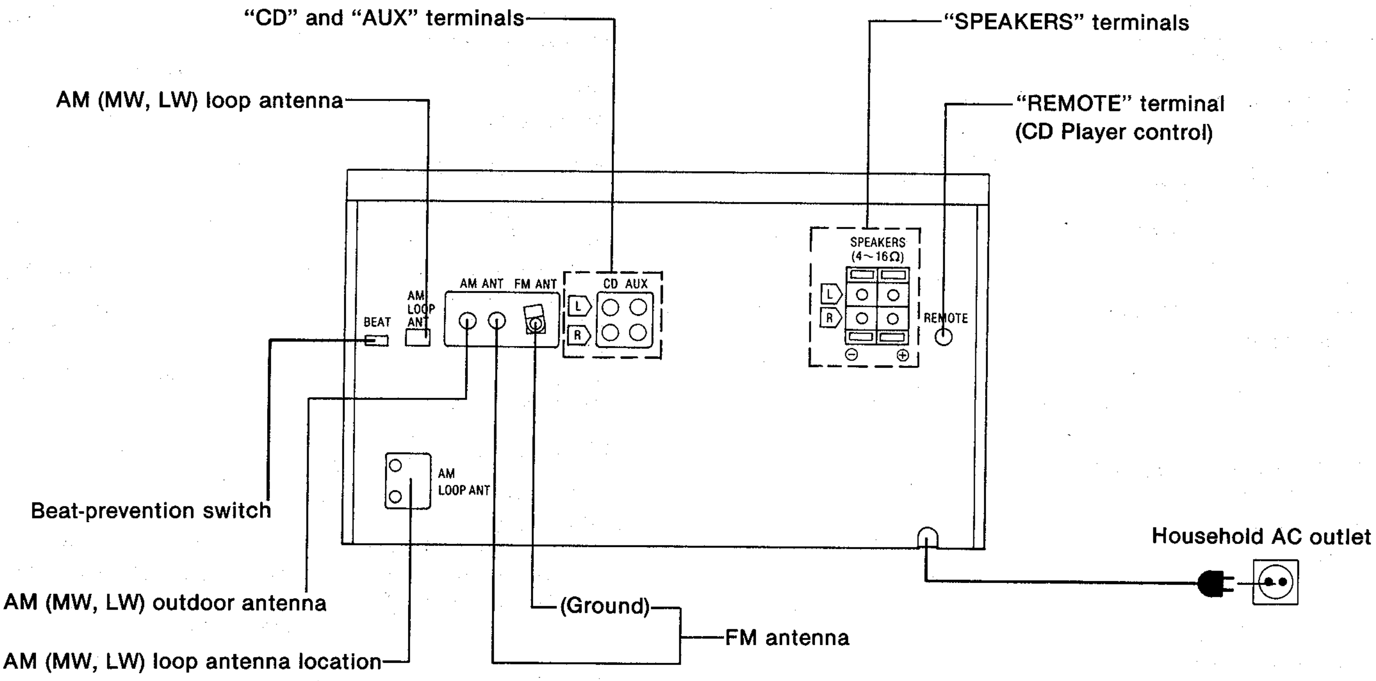
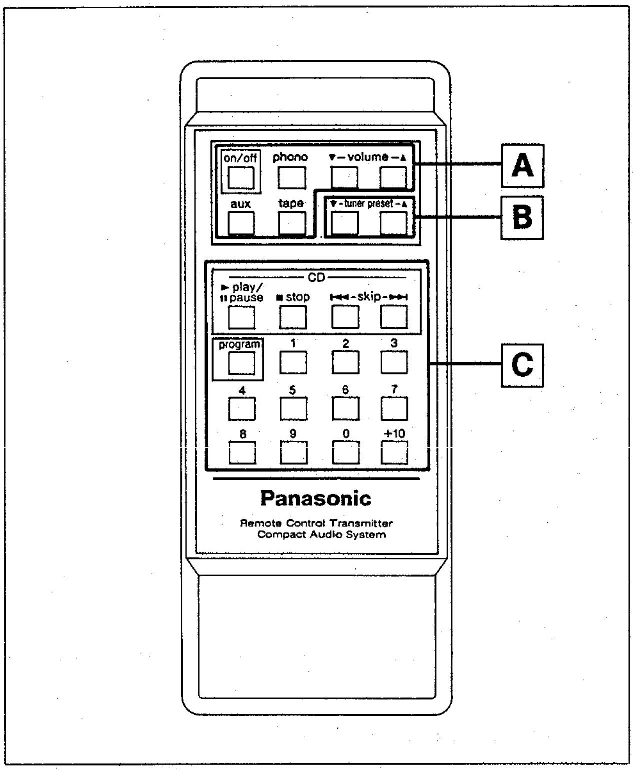
ACCESSORIES

• Dust cover and hinges (SYE1130), (SBH9383)	1 and 2
• AM loop antenna (SPB1163T)	1
• Remote-control transmitter (EUR64597)	1
• Platter mat (SJY4076)	1
• AM antenna holder (SMA233-1M)	1
• Batteries (UM-3NEP-2P)	2
• FM indoor antenna (SSA269)	1
• Screws (XTN3+10AFZ)	2
• 45-rpm adaptor (SJY5018-1)	1

CONNECTIONS


"CD" and "AUX" terminals
"SPEAKERS" terminals
AM (MW, LW) loop antenna
"REMOTE" terminal
(CD Player control)
SPEAKERS
(4~16Ω)
L
R
⊖
⊕
REMOTE
AM ANT
FM ANT
CD
AUX
L
R
BEAT
AM
LOOP
ANT
AM
LOOP ANT
Beat-prevention switch
Household AC outlet
AM (MW, LW) outdoor antenna
(Ground)
FM antenna
AM (MW, LW) loop antenna location

■ REMOTE-CONTROL OPERATION



For detailed information concerning operation steps, etc., please refer to the appropriate page for each unit and the respective operation instructions. For this system, you can listen to tapes or compact discs, etc., by operating the remote-control transmitter without using the input selectors.

A Amplifier controls

on/off

Press this button to switch the unit ON or to the stand-by condition.

Note that there is no need to press this button if the unit's power is ON. (if it is pressed, the unit will be switched to the stand-by mode.)

▼-volume-▲

For adjustment of the volume level.
▲: To increase the volume level.
▼: To reduce the volume level.

phono, tape, aux

These buttons are used to select the program source (phono, tape, etc.)
phono: Press to listen to phono discs.
tape: Press to listen to tapes.
aux: Press to listen to sound from equipment connected to the "AUX" terminals of this unit.

B Tuner controls

▼-tuner preset-▲

To select a preset channel.
▲: Press to change to a higher channel.
▼: Press to change to a lower channel.
(If either button is pressed and held, the channel will change continuously.)

C Compact-disc controls

For a compact disc player manufactured by our company with a remote-control terminal. (Contact your dealer for details.)

▶ play/❚❚ pause

Press this button to start disc play.
The pause mode will be activated when this button is pressed during play.
Note: The pause function may not be usable with some types of compact-disc players.

■ stop

Press this button to stop disc play.
Note:
Depending upon the compact disc player used, presettings may be erased when this button is pressed.

⏮-skip-⏭

Press one of these buttons to select the desired track.
The search mode will be activated when this button is pressed and held.
⏮ : for a prior track
⏭ : for a track ahead
Note: The search function may not be usable with some types of compact-disc players.

program

Pressing this button initates the programmed play mode. You can then enter specific tracks using the numeric button (1–0, +10.)

1–0, +10

To select the track numbers.

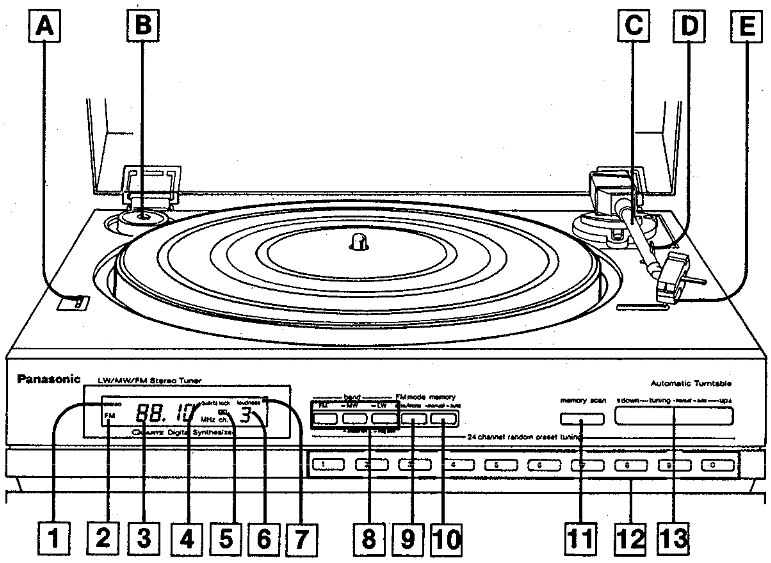
- **When the track number is specified after pressing the program button,** the selected track number will be programmed. (To play the selected track, press the play/pause button.)
- The play begins automatically from the selected track **when a track is selected while the unit is in the stop mode.**

To select the specific track number

- **Tracks 1–9:** Press the appropriate numeric button 1–9 directly.
- **Tracks 10 and up:** First press +10, then 1–0. (Press +10 twice and 0 for 20, +10 three times and 0 for 30, and so on.)

FRONT PANEL CONTROLS AND FUNCTIONS

The indication AM used here includes both MW and LW.



Turntable section

A Speed selector (SPEED)

This selector is used to set the turntable speed to agree with the speed of the phono disc to be played.

B 45-rpm disc adaptor

This adaptor should be used when playing a disc with a large center hole.

C Tonearm

D Arm rest

E Cartridge

Tuner section

1 FM stereo indicator (stereo)

This indicator automatically illuminates when an FM stereo broadcast is being received.
It will not illuminate if the FM mode selector is set to the monaural mode.

2 Band indicator (FM, MW, LW)

This indicator indicates the band selected by using the band selector.

3 Digital frequency/input display

This display shows the sound source selected by pressing one of the input selectors. If the "tuner" input selector is pressed, there will be a change to the frequency after the source is indicated.

4 Quartz-lock indicator (quartz lock)

This indicator illuminates when the tuner is precisely tuned to a broadcast station.

5 Memory indicator (M)

This indicator illuminates when the memory button is pressed.

6 Channel display

This display shows the channel number selected by one of the preset-tuning buttons.

7 Loudness indicator (loudness)

This indicator illuminates when the loudness button is pressed.

8 Band selectors (band)

These selectors are used to select the band.
allocation: When the MW button is pressed for about 3 seconds, the MW frequency step will change to 10 kHz per step. (This unit is set to 9 kHz before shipment.) In order to return to the original frequency indication, press this button for about 3 seconds again.
freq shift: When the LW button is pressed for about 3 seconds during reception of an LW broadcast, the LW frequency will decrease by 2 kHz. In order to return to the original frequency indication, press this button for about 3 seconds again.

9 FM mode selector (FM mode)

This unit automatically switches to the stereo mode when an FM stereo broadcast is received. This selector is used to select the mode (stereo or monaural) of FM broadcast signals.

10 Memory button (memory)

This button can be used when presetting broadcast station frequencies to the memory.

11 Memory scan button (memory scan)

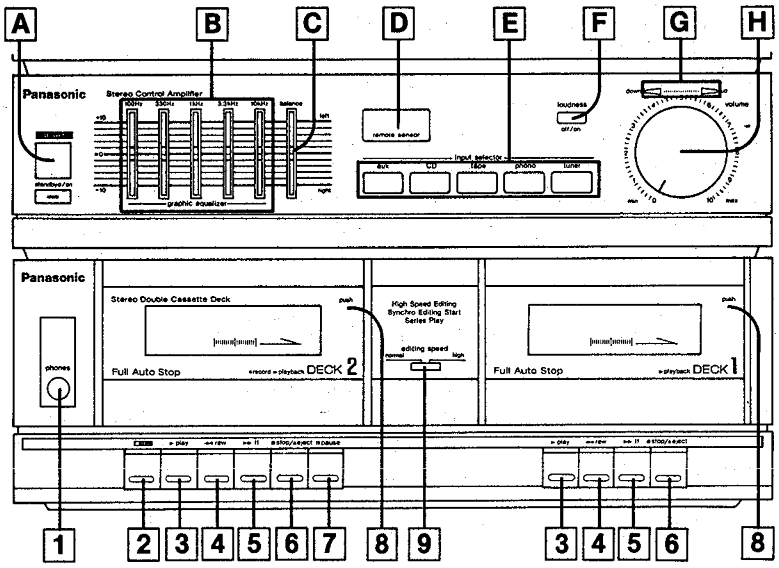
This button can be used to locate a desired broadcast station; each broadcast station is selected for about four seconds.

12 Preset-tuning buttons (1 – 0) (24 channel random preset tuning)

These buttons are used to preset broadcast frequencies into the memory of this unit, and are also pressed to recall the desired preset stations.

13 Tuning buttons (tuning)

These buttons are used for tuning to the desired broadcast station.


A
B
C
D
E
F
G
H
Panasonic
Stereo Control Amplifier
100Hz
330Hz
1kHz
3.3kHz
10kHz
balance
+10
±0
−10
left
right
graphic equalizer
standby/on
remote sensor
input selector
aux
CD
tape
phono
tuner
loudness
off/on
down
up
volume
min
0
10
max
Panasonic
phones
Stereo Double Cassette Deck
push
Full Auto Stop
record · playback DECK 2
High Speed Editing
Synchro Editing Start
Series Play
editing speed
normal
high
Full Auto Stop
playback DECK 1
push
play
rew
ff
stop/eject
pause
play
rew
ff
stop/eject
1
2
3
4
5
6
7
8
9
3
4
5
6
8

Amplifier section

A Power "standby ⏻/on" switch (power "standby ⏻/on")

This switch switches on and off the secondary circuit power only.The unit is in the stand-by condition when this switch is set to the "standby ⏻" position. Regardless of the switch setting, the primary circuit is always "live" as long as the power cord is connected to an electrical outlet.

B Equalizer controls (graphic equalizer)

These controls are for compensation of tonal quality. By sliding the controls at each of the indicated frequencies in the "+" direction, the tonal quality is increased, and by sliding them in the "−" direction, the tonal quality is decreased.

C Balance control (balance)

This control can be used to adjust the balance of sound heard from the left and right speaker systems.

D Remote-control signal receptor (remote sensor)

Receives the signals from the remote-control transmitter.

E Input selectors (input selector)

These selectors are used to select the sound source to be heard, such as a phono disc, radio broadcast, etc. (AUX/CD/TAPE/PHONO/TUNER)

F Loudness button (loudness)

This button is used when listening to music at a low volume level. Auditory perception of sound in the low frequency range falls off at low volume, but when the switch is in this position, this deficiency is compensated for, so that the full impact of the musical performance can be enjoyed.

G Volume-level adjustment indicators

One of these indicators flashes continually to indicate when the sound volume level is being adjusted by using the volume controls on the remote-control transmitter.
up (▷): When increasing the volume level.
down (◁): When reducing the volume level.

H Volume control (volume)

Cassette deck section

1 Headphones jack (phones)

2 Record button (○ rec)

This button is used when making a recording (tape deck 2 only).

3 Playback button (▶ play)

4 Rewind button (◀◀ rew)

5 Fast-forward button (▶▶ ff)

6 Stop/eject button (■ stop/ ▲ eject)

This button is used to open the cassette holder, and to stop tape movement.

7 Pause button (❚❚ pause)

This button is used to temporarily stop the tape playback or recording of tape deck 2 only.

8 Cassette holder

9 Edit-recording tape-speed selector (editing speed)

This selector is used to select the recording speed when a tape-to-tape recording is made.

PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following condition is noticed:

- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.

If this occurs, follow the procedure outlined below.

1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again.

Note:

When the protection circuitry functions, the unit will not operated unless the power is first turned off and then on again.

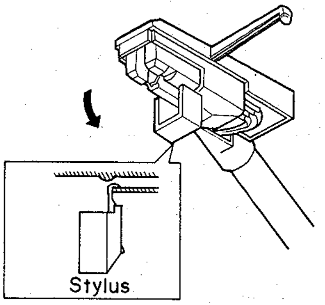
BEFORE REPAIR AND ADJUSTMENT

Disconnect AC power, Discharge Power Supply Capacitors C712 through a 10Ω, 5W resistor to ground.
DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may destroy solid state devices.
After repairs are completed, restore power gradually using a variac, to avoid overcurrent.
Current consumption at 50Hz/60Hz in NO SIGNAL mode should be shown below with respect to supply 220V/240V.

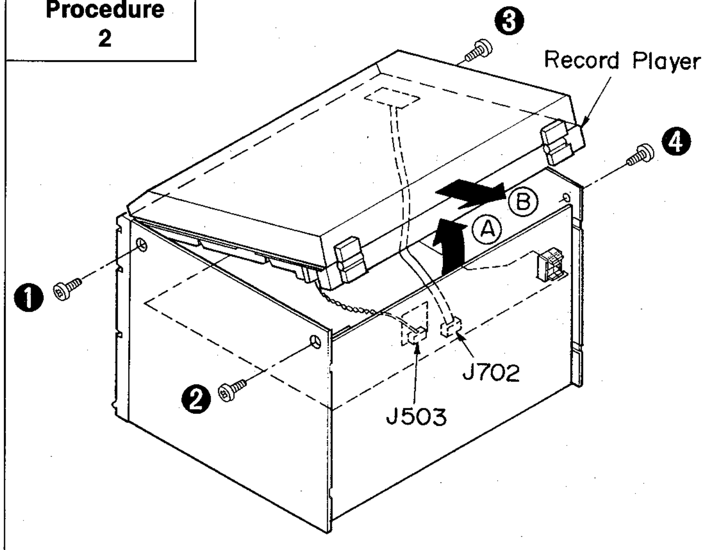
Power supply voltage	AC 220V	AC 240V	
Consumed current 50Hz	20~60mA	stand by	20~70mA
		power on	60~140mA
Consumed current 60Hz	100~160mA	——	

DISASSEMBLY INSTRUCTIONS

Ref. No. 1	**Removal of the stylus**
Procedure 1	• Remove the stylus in the direction of the arrow.

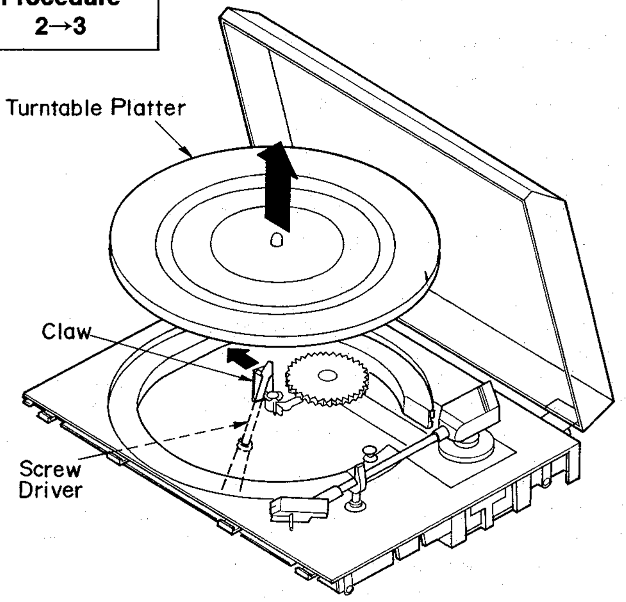


Ref. No. 2	**Removal of the record player**
Procedure 2	



1. Remove the 4 screws (❶~❹).
2. Lift the record player in the direction of the arrow Ⓐ and remove the 2 connector (J503, J702).
3. Remove the reocrd player in the direction of arrow Ⓑ.

Ref. No. 3	**Removal of the turntable platter**
Procedure 2→3	

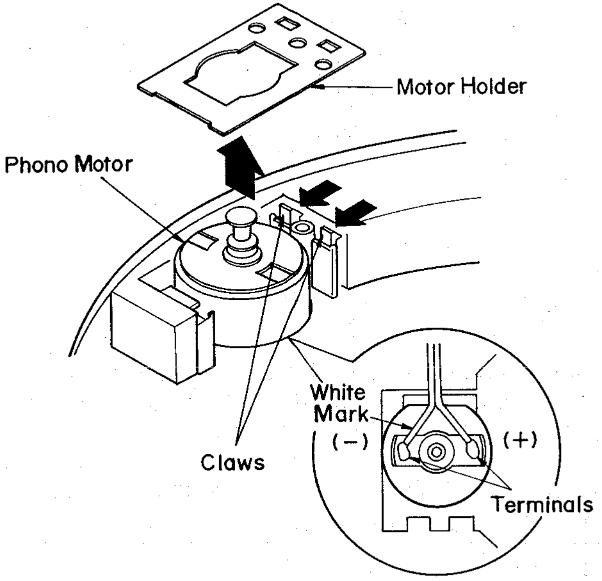


1. Release the claw by screwdriver from under side.
2. Lift the turntable platter.

Ref. No. 4

Removal of the phono motor

Procedure 2→3→4

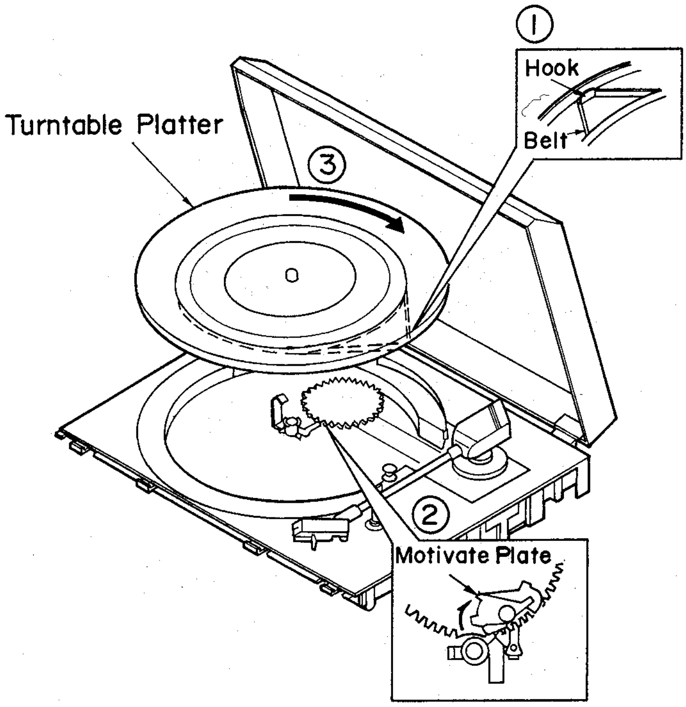

Motor Holder
Phono Motor
White Mark
(−)
(+)
Claws
Terminals

1. Unsolder the terminals of the phono motor.
2. Release the 2 claws and remove the motor holder.
3. Lift the phono motor.

Ref. No. 6

Installation of the turntable platter

Procedure 2→3→6

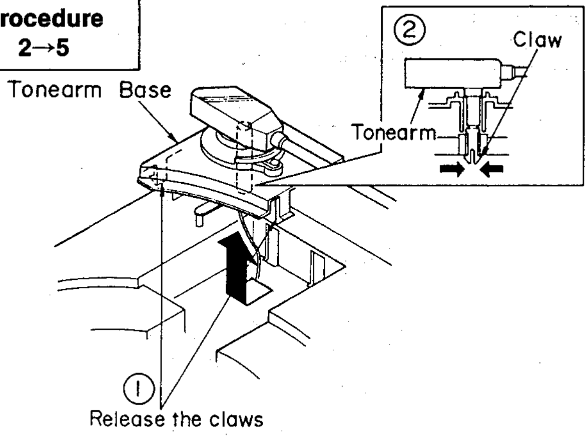

①
Hook
Belt
Turntable Platter
③
②
Motivate Plate

1. Fix the belt to the hook.
2. Set the motivate plate in the direction of the arrow.
3. Install the turntable platter and turn the turntable platter in the direction of the arrow.

Ref. No. 5

Removal of the tonearm

Procedure 2→5

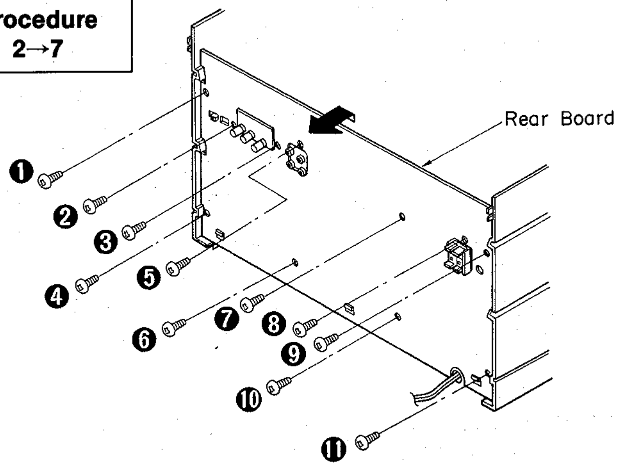

②
Claw
Tonearm Base
Tonearm
①
Release the claws

1. Release the 2 claws and remove the tonearm base in the direction of the arrow.
2. Release the claw and lift the tonearm.

Ref. No. 7

Removal of the rear board

Procedure 2→7

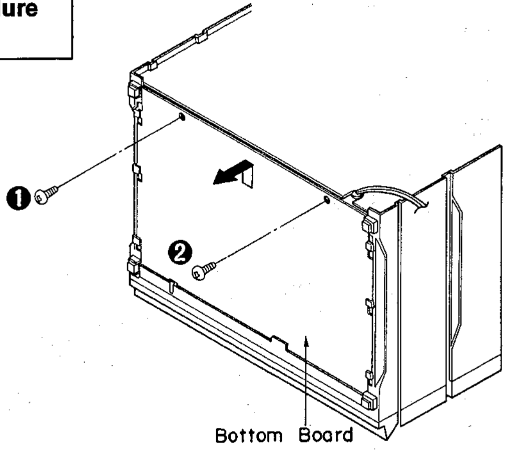

Rear Board
❶
❷
❸
❹
❺
❻
❼
❽
❾
❿
⓫

1. Remove the 11 screws (❶~⓫).
2. Remove the rear board in the direction of the arrow.

Ref. No. 8

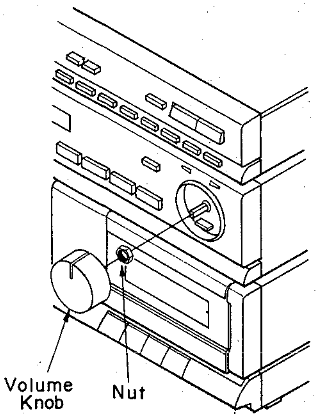
Removal of the bottom board

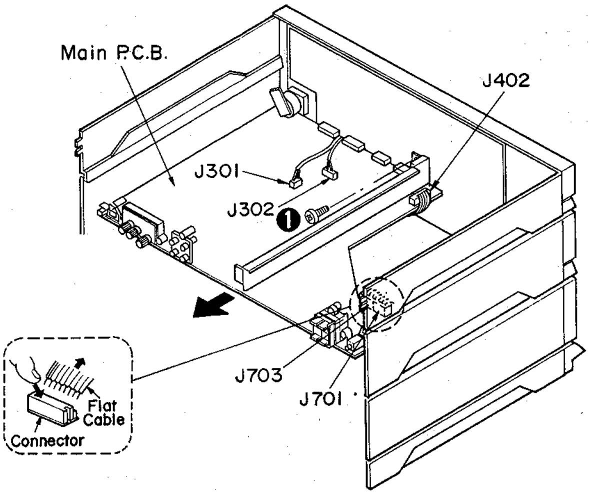
Procedure 8


❶
❷
Bottom Board

1. Remove the 2 screws (❶, ❷).
2. Remove the bottom board in the direction of the arrow.

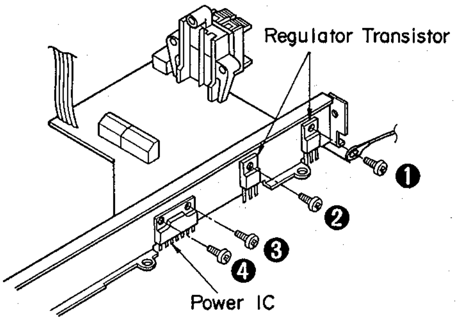
Ref. No. 9	Removal of the main P.C.B.
Procedure 2→7→9	1. Pull out the volume knob. 2. Remove the nut.


Volume Knob
Nut


Main P.C.B.
J402
J301
J302
❶
J703
J701
Flat Cable
Connector

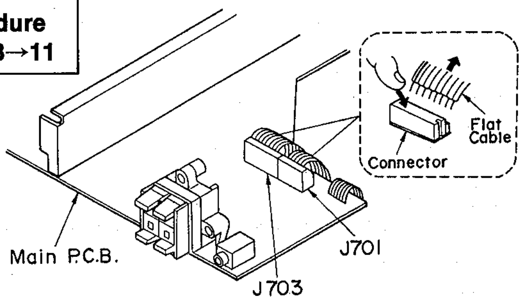
3. Pull out the 3 connectors (J301, J302, J402).
4. Remove the 2 flat cables (J701, J703).
5. Remove the 1 screw (❶).
6. Remove the main P.C.B. in the direction of the arrow.

Ref. No. 10	Removal of the power IC and regulator transistor
Procedure 2→7→9→10	1. Remove the 4 screws (❶~❹). 2. Unsolder the power or regulator transistor.

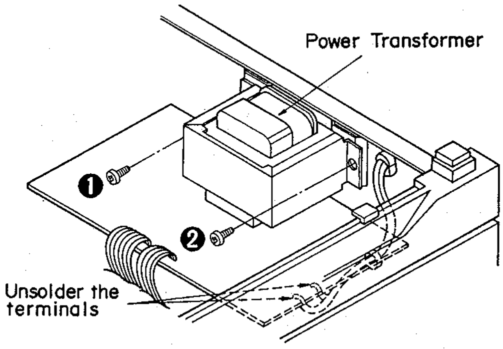

Regulator Transistor
❶
❷
❸
❹
Power IC

- **When mounting the power IC or regulator transistor.** Apply silicone compound (SZZOL15) to the rear side of power IC or regulator transistor.

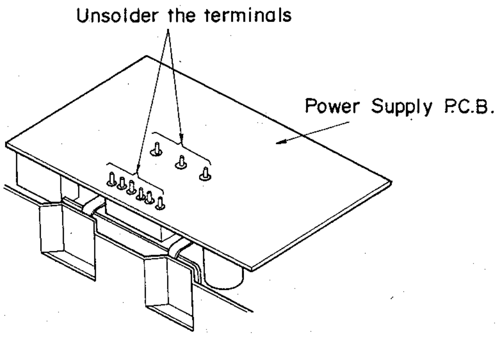
Ref. No. 11	Removal of the power transformer and power supply P.C.B.
Procedure 2→7→8→11	


Flat Cable
Connector
Main P.C.B.
J701
J703

1. Remove the 2 flat cables (J701, J703).

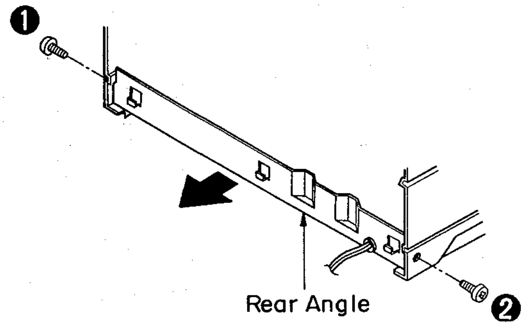

Power Transformer
❶
❷
Unsolder the terminals

2. Remove the 2 screws (❶, ❷).
3. Unsolder the terminals of the AC power cord.


Unsolder the terminals
Power Supply P.C.B.

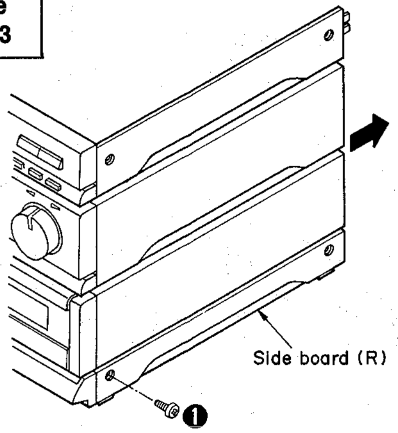
4. Unsolder the terminals of the power transformer.

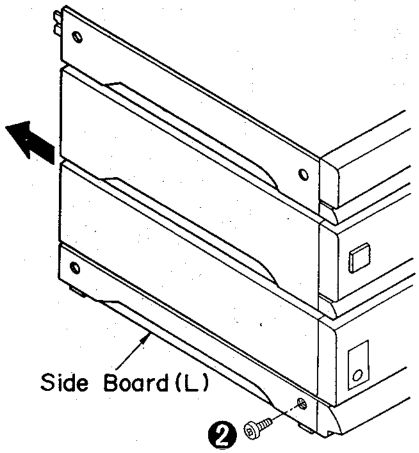
Ref. No. 12	Removal of the rear angle
Procedure 2→7→8→11→12	


❶
Rear Angle
❷

1. Remove the 2 screws (❶, ❷).
2. Remove the rear angle in the direction of the arrow.

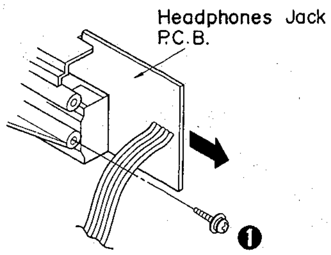
Ref. No. 13	**Removal of the side board (L)-(R)**
Procedure 11→12→13	


Side board (R)
❶


Side Board (L)
❷

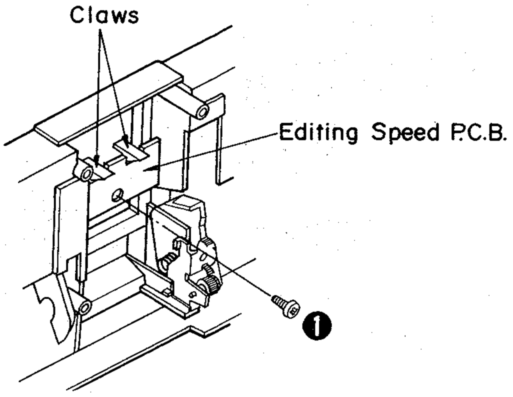
1. Remove the 1 screw (❶).
2. Remove the side board (R) in the direction of the arrow.
3. Remove the 1 screw (❷).
4. Remove the side board (L) in the direction of the arrow.

Ref. No. 14	**Removal of the headphones jack P.C.B.**
Procedure 9→13→14	


Headphones Jack P.C.B.
❶

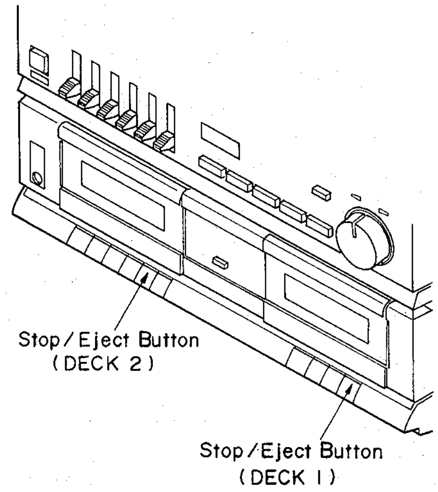
1. Remove the 1 screw (❶).
2. Remove the headphones jack P.C.B. in the direction of the arrow.

Ref. No. 16	**Removal of the editing speed P.C.B.**
Procedure 15→16	

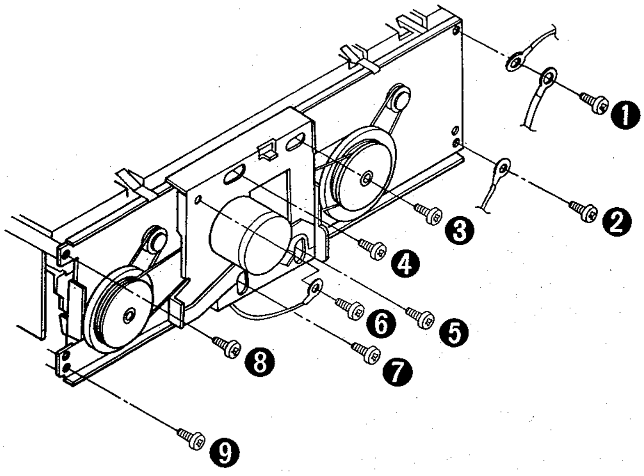

Claws
Editing Speed P.C.B.
❶

1. Remove the 1 screw (❶).
2. Release the 2 claws.

Ref. No. 15	**Removal of the cassette tape deck (DECK 1, DECK 2)**
Procedure 9→13→15	


Stop/Eject Button (DECK 2)
Stop/Eject Button (DECK 1)

1. Push the stop/eject button.

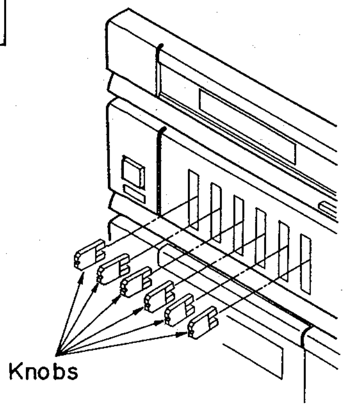


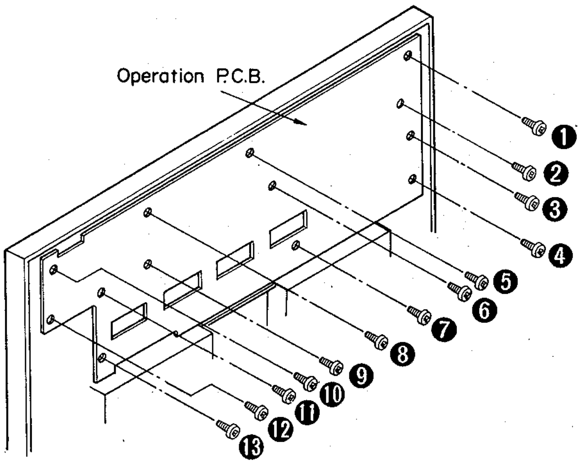
2. Remove the 9 screws (❶~❾).

Ref. No. 17

Removal of the operation P.C.B.

Procedure 15→16→17



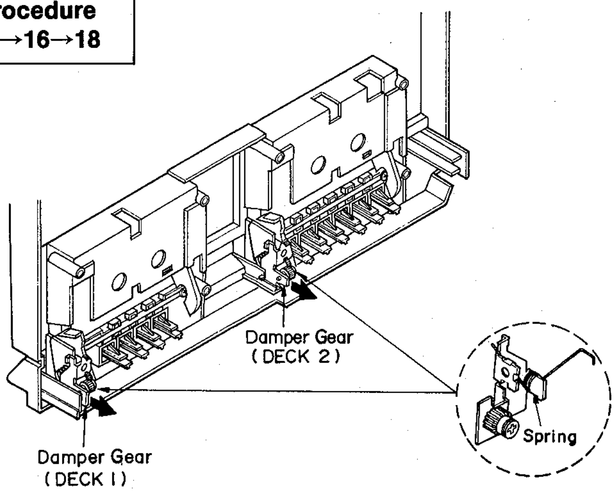

Operation P.C.B.
❶
❷
❸
❹
❺
❻
❼
❽
❾
❿
⓫
⓬
⓭

1. Pull out the 6 knobs.
2. Remove the 13 screws (❶~⓭).

Ref. No. 18

Removal of the damper gear (DECK 1, DECK 2)

Procedure 15→16→18

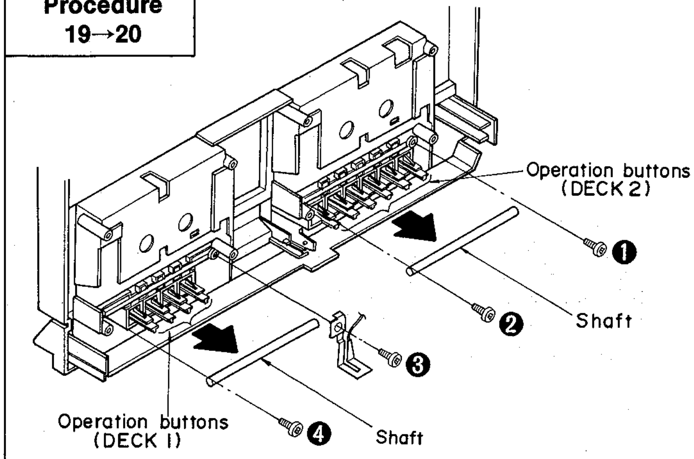

Damper Gear
(DECK 2)
Spring
Damper Gear
(DECK 1)

- Pull out the damper gear in the direction of the arrow.

Ref. No. 20

Removal of the operation buttons (DECK 1, DECK 2)

Procedure 19→20

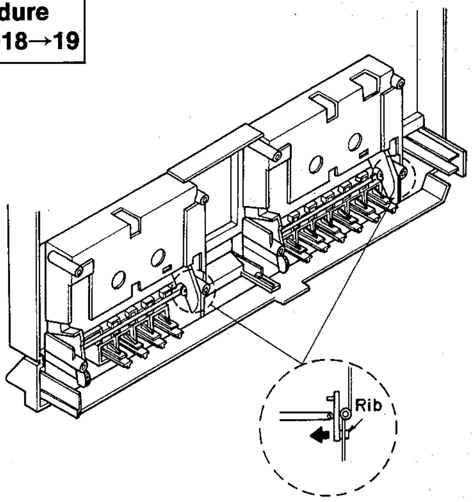

Operation buttons
(DECK 2)
❶
❷
Shaft
❸
Operation buttons
(DECK 1)
❹
Shaft

1. Remove the 4 screws (❶~❹).
2. Remove the shaft.
3. Remove the operation buttons.

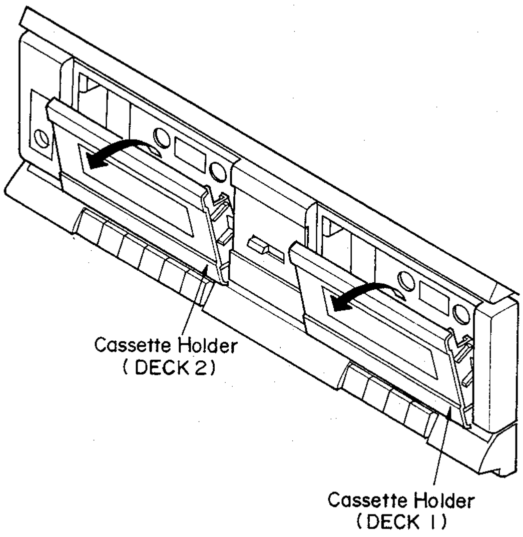
Ref. No. 19

Removal of the cassette holder (DECK 1, DECK 2)

Procedure 15→16→18→19



1. Remove the rib in the direction of the arrow.


Cassette Holder
(DECK 2)
Cassette Holder
(DECK 1)

2. Pull out the cassette holder in the direction of the arrow.

MEASUREMENTS AND ADJUSTMENTS

• MW/LW/FM section

Control positions and equipment used

- AM and FM signal generator (AM and FM-SG)
- Stereo modulator
- Distortion analyser
- Oscilloscope
- AF Oscillator
- AC and DC electronic voltmeter (EVM)
- Digital frequency counter
- Choke coil (100µH)
- Resistor (330kΩ, 1kΩ, 1MΩ)

Note: For **T201** (MW-IFT), **L203** (MW OSC coil), and **L210** (LW OSC coil) they are supplied as adjusted parts. So, do not turn the cores of the parts.

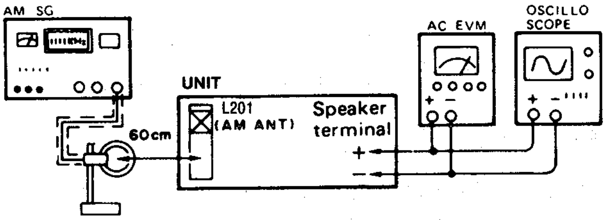
MW-RF ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to **"MW"** position.
3. Place the radio dial and signal generator setting to **612kHz.**
4. Adjust **L202** for maximum output.
5. Place the radio dial and signal generator setting to **1503kHz.**
6. Adjust **CT201** for maximum output.
7. Repeat steps 3~6.

Note:

Antenna input level must be as low as possible being free from AGC.

AM SIGNAL GENERATOR CONDITION
Modulation................................30%
Modulation frequency.............400Hz


AM SG
UNIT
L201
(AM ANT)
60cm
Speaker terminal
+
−
AC EVM
OSCILLO SCOPE

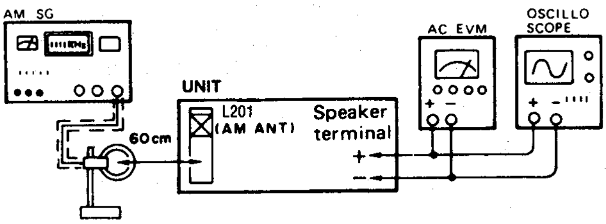
LW-RF ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "LW" position.
3. Place the radio dial and signal generator setting to **155kHz.**
4. Adjust **L209** for maximum output.
5. Place the radio dial and signal generator setting to **353kHz.**
6. Adjust **CT202** for maximum output.
7. Repeat steps 3~6.

Note:

Antenna input level must be as low as possible being free from AGC.

AM SIGNAL GENERATOR CONDITION
Modulation................................30%
Modulation frequency.............400Hz


AM SG
UNIT
L201
(AM ANT)
60cm
Speaker terminal
+
−
AC EVM
OSCILLO SCOPE

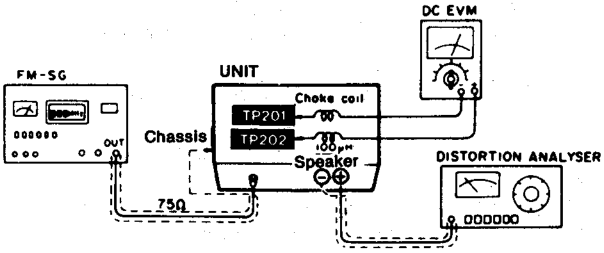
FM MONO DISTORTION ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to **"FM"** position.
3. Place the radio frequency display and signal generator setting to **100.10MHz.**
4. Adjust **T202** core so that voltage measured in signal mode is **0mV** (0±30mV) in 300mV range.
5. Adjust **T203** so that the distortion factor of Lch is minimized.
6. Repeat steps 4 and 5.
7. Make sure that the distortion factors of Lch and Rch are nearly the same with each other to minimum.

Note:

The adjusting screwdriver used should be made of resin.

FM SIGNAL GENERATOR CONDITION
Modulation................................100%
Modulation frequency.............1kHz
Output level..............................66dB


FM-SG
OUT
UNIT
Chassis
Choke coil
TP201
TP202
100µH
Speaker
75Ω
DC EVM
DISTORTION ANALYSER

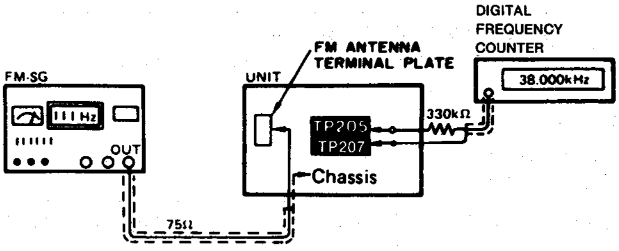
MPX VCO ADJUSTMENT

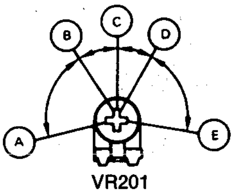
1. Test equipment connection is shown in figure.
2. Set the unit to “**auto**” position.
3. Place the radio dial and signal generator setting to **100.10 MHz**.
4. Adjust **VR201** for **38 kHz ± 0.05 kHz** on frequency counter reading.

★USING ALTERNATE SYSTEM

1. Apply stereo signal from generator or receive the stereo broadcast.
2. Adjust **VR201** until stereo indicator lights up. Cement arm of **VR201** as shown in figure.

FM SIGNAL GENERATOR CONDITION
Modulation................................0% (non-modulation)
Output level.............................66 dB


DIGITAL FREQUENCY COUNTER
FM ANTENNA TERMINAL PLATE
FM-SG
UNIT
111 Hz
OUT
TP205
TP207
330kΩ
38.000kHz
Chassis
75Ω


B
C
D
A
E
VR201

Ⓐ – Ⓑ Ⓓ – Ⓔ : Stereo OFF position
Ⓑ – Ⓓ : Stereo ON position (indicator lighting)
Ⓒ : Adjust point of Pilot circuit

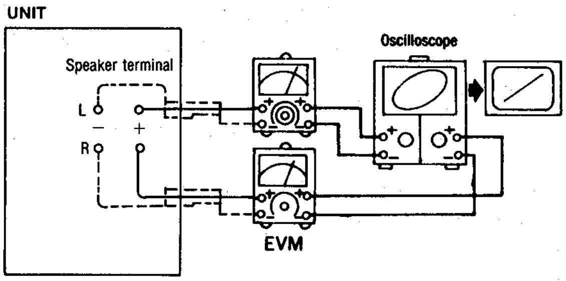
• CASSETTE DECK section

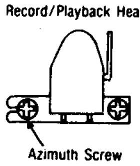
MEASUREMENT CONDITION:
- Make sure heads are clean
- Make sure capstan and pressure roller are clean

TEST TAPE:
- Head azimuth adjustment (8 kHz, −20 dB): QZZCFM
- Tape speed adjustment (3 kHz, −10 dB): QZZCWAT
- Normal reference blank: QZZCRA

HEAD AZIMUTH ADJUSTMENT (DECK 1, 2)

1. Test equipment connection is shown in figure.
2. Playback the azimuth adjusted part (8 kHz, −20 dB) of the test tape (QZZCFM) and regulate the angle adjusting screw so that the outputs of L-CH and R-CH are maximized. (When the adjusting positions are different with L-CH and R-CH, find a position where the outputs of L-CH and R-CH are balanced, and then make the adjustment.)
3. At the same time, draw a lissajous waveform and eliminate phase deflection.
4. After the adjustment, apply screw-lock to the angle adjusting value.

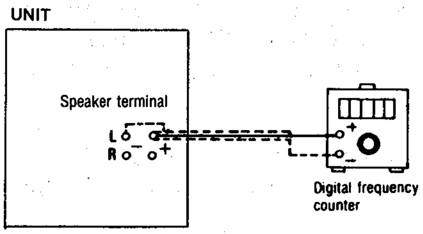

UNIT
Speaker terminal
L
R
−
+
Oscilloscope
EVM


Record/Playback Head
Azimuth Screw

TAPE SPEED ADJUSTMENT (DECK 1, 2)

1. Test equipment connection is shown in figure.
2. Set the unit to “**TAPE**” position.
3. Playback the middle part of the test tape (QZZCWAT).
4. Adjust **VR401** so that the output is within the standard value. (DECK 1, 2)

Note:
The Normal speed adjustment must be done before the High speed adjustment.

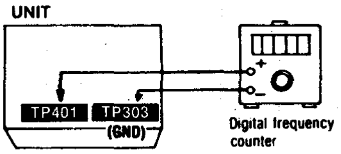

UNIT
Speaker terminal
L
R
−
+
Digital frequency counter

DECK 1 Standard value: 2980∼3020 Hz (Normal)
DECK 2 Standard value: 2955∼3045 Hz (Normal)

Standard value: 5340∼5910 Hz (High)

BIAS OSC FREQUENCY ADJUSTMENT (DECK 2)

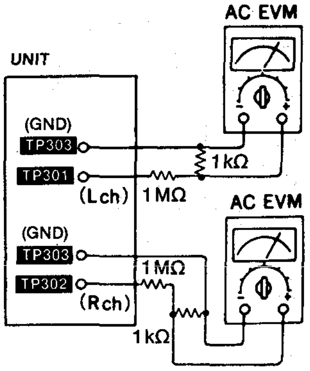
1. Test equipment connection is shown in figure.
2. Set the unit to "**TAPE**" position.
3. Place cassette deck into **REC** mode.
4. Adjust **L401** for **74~83kHz** (BEAT PROOF: A) **[78~89kHz** (BEAT PROOF: B)] on frequency counter reading.


UNIT
TP401
TP303
(GND)
Digital frequency counter

RECORDING BIAS ADJUSTMENT (DECK 2)

1. Test equipment connection is shown in figure.
2. Insert the normal tape.
3. Place cassette deck into **REC** mode.
4. Adjust **VR305** so that the output between TP301 (L-CH) [TP302 (R-CH)] and TP303 (GND) is within the standard value.

DECK 2 Standard value: 10~14.5mV

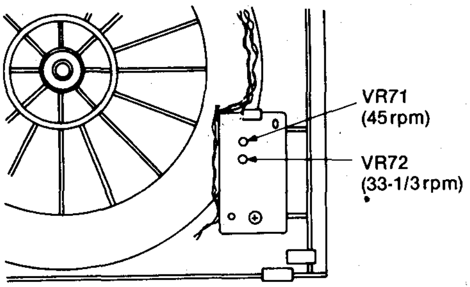

AC EVM
UNIT
(GND)
TP303
TP301
(Lch)
1kΩ
1MΩ
AC EVM
(GND)
TP303
TP302
(Rch)
1MΩ
1kΩ

- **PLAYER section**

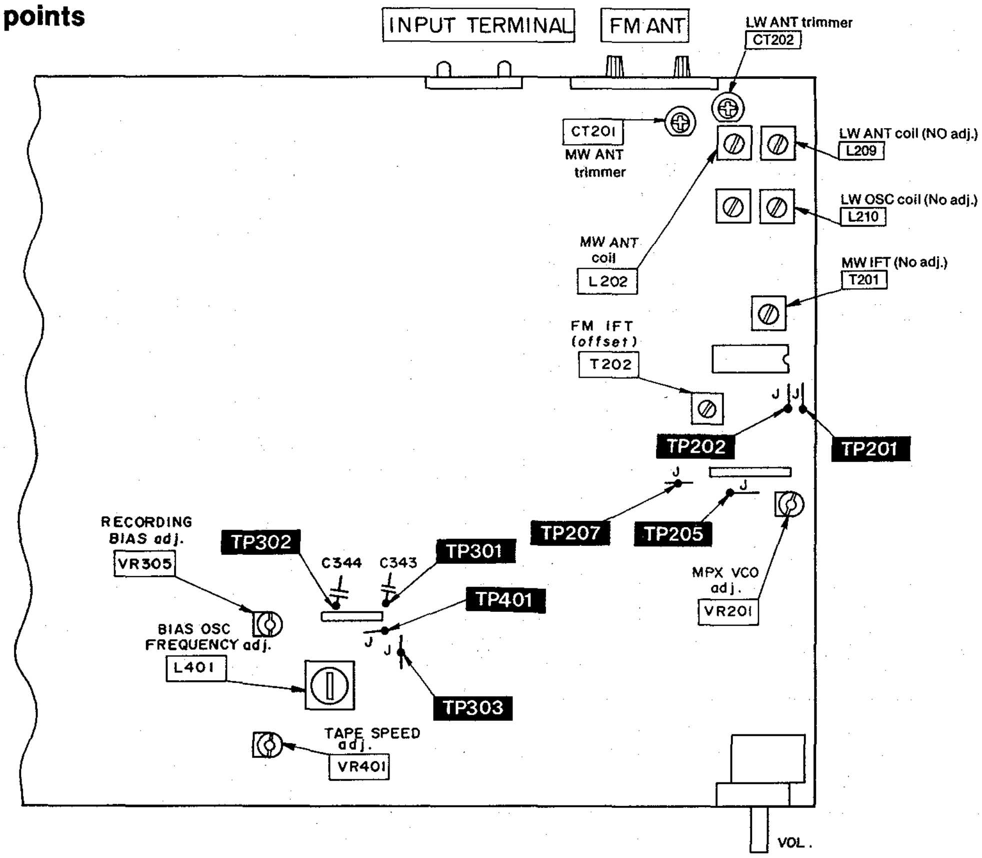
ROTATING SPEED ADJUSTMENT

1. Set the speed selector to "33".
2. Turn the power switch "on" and press the start button.
3. Adjust **VR72** so that turntable platter rotates at the rated speed. **(33-1/3 rpm)**
4. Set the speed selector to "45".
5. Adjust **VR71** so that turntable platter rotates at the rated speed. **(45 rpm)**

Note: Be sure to adjust 33-1/3 rpm first.


VR71
(45rpm)
VR72
(33-1/3rpm)

•Adjustment points


INPUT TERMINAL
FM ANT
LW ANT trimmer
CT202
CT201
MW ANT trimmer
LW ANT coil (NO adj.)
L209
LW OSC coil (No adj.)
L210
MW ANT coil
L202
MW IFT (No adj.)
T201
FM IFT (offset)
T202
TP202
TP201
J
TP207
TP205
MPX VCO adj.
VR201
RECORDING BIAS adj.
VR305
TP302
C344
C343
TP301
TP401
BIAS OSC FREQUENCY adj.
L401
TP303
TAPE SPEED adj.
VR401
VOL.

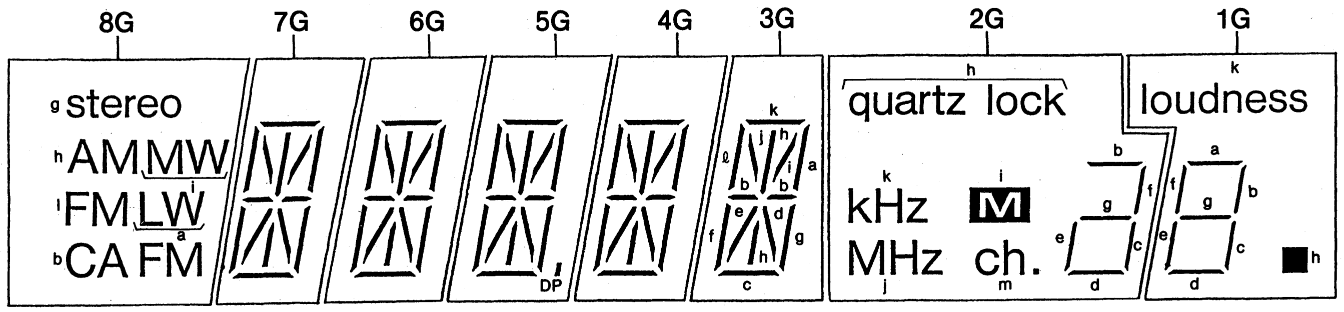
FUNCTION OF IC TERMINAL

• IC901 (LC6554H-4082): Microcomputer

PIN NO.	MARK	I/O	DESCRIPTION OF TERMINAL
1	PP0	O	Segment signal output for FL display
2 〜 5 • 6 • 7	PA0 〜 PA3 • PB0 PB1	I	Input terminal for key return signal from external key matrix
8	PB2 (P. ON/OFF)	I	Power SW detection terminal
9	PB3 (STANDBY)	I	Power supply detection terminal
10	PC0	—	Not used, connected to power supply
11	PC1 (STEREO)	I	Stereo signal input
12	PC2 (SD)	I	Signal received detection terminal
13	PC3 (DPLY)	—	Not used, connected to GND
14	PD0 (RELAY)	O	Relay control signal output
15	PD1 (DK)	—	Not used, connected to GND
16	PD2 (P. ST)	—	
17	PD3 (P. STP)	—	
18	PE0 (BEEP)	—	
19	PE1 (TU. MU)	O	Muting control signal output for tuner circuit
20	PE2 (ATT)	—	Not used, connected to GND
21	PE3 (A. MU)	O	Muting control signal output for amplifier circuit
22	TEST	—	Test terminal (Not used, connected to GND)
23	VSS	—	Ground terminal
24	OSC1	I	Oscillator terminal
25	OSC2	O	
26	$\overline{\text{RES}}$	I	Reset signal input
27	PF0 (DATA)	O	Serial data output terminal
28	PF1 (CL)	O	Clock signal terminal for signal data
29	PF2 (CE)	O	Chip enable terminal
30	PF3 $\overline{\text{(INT)}}$	I	Remote control signal input
31	PG0 (MONO)	O	Forcible monaural select signal output
32	PG1 (HOUSE)	—	Not used, connected to GND
33	PG2 (ST)	O	Level shift control signal output
34	PG3 (DUB)	O	Tape speed control signal output
35	P10 (V. DOWN)	O	LED drive signal output
36	P11 (V. UP)		
37	P12 (SURR)	—	Not used, connected to GND
38	P13 (LOUD)	O	Loudness control signal output
39	PJ0 (V.M.D)	O	Volume motor control UP/DOWN signal output
40	PJ1 (V.M.U)		
41	PJ2	—	Not used, connected to GND
42	PJ3 (NOUSE)	—	Not used, connected to GND
43	VP	I	Power supply terminal (negative voltage)
44 〜 47	PK0 〜 PK3	O	Segment signal output for FL display
48 〜 51	PL0 〜 PL3	O	Segment signal output for FL display
52 〜 55	PM0 〜 PM3	O	Segment signal output for FL display
56	VDD	I	Power supply terminal (positive voltage)
57 〜 60	PN0 〜 PN3	O	Key scan signal and digit signal for FL display
61 〜 64	PO0 〜 PO3	O	Key scan signal and digit signal for FL display

■ INTERNAL CONNECTION OF FL

• Grid connection diagram


8G
7G
6G
5G
4G
3G
2G
1G
g stereo
h AM MW
l FM LW
b CA FM
i
a
DP
k
j
l
a
b
e
d
f
g
h
c
h
quartz lock
k
loudness
k
kHz
i
M
MHz
ch.
j
m
b
a
g
f
g
b
e
c
e
c
d
d
h

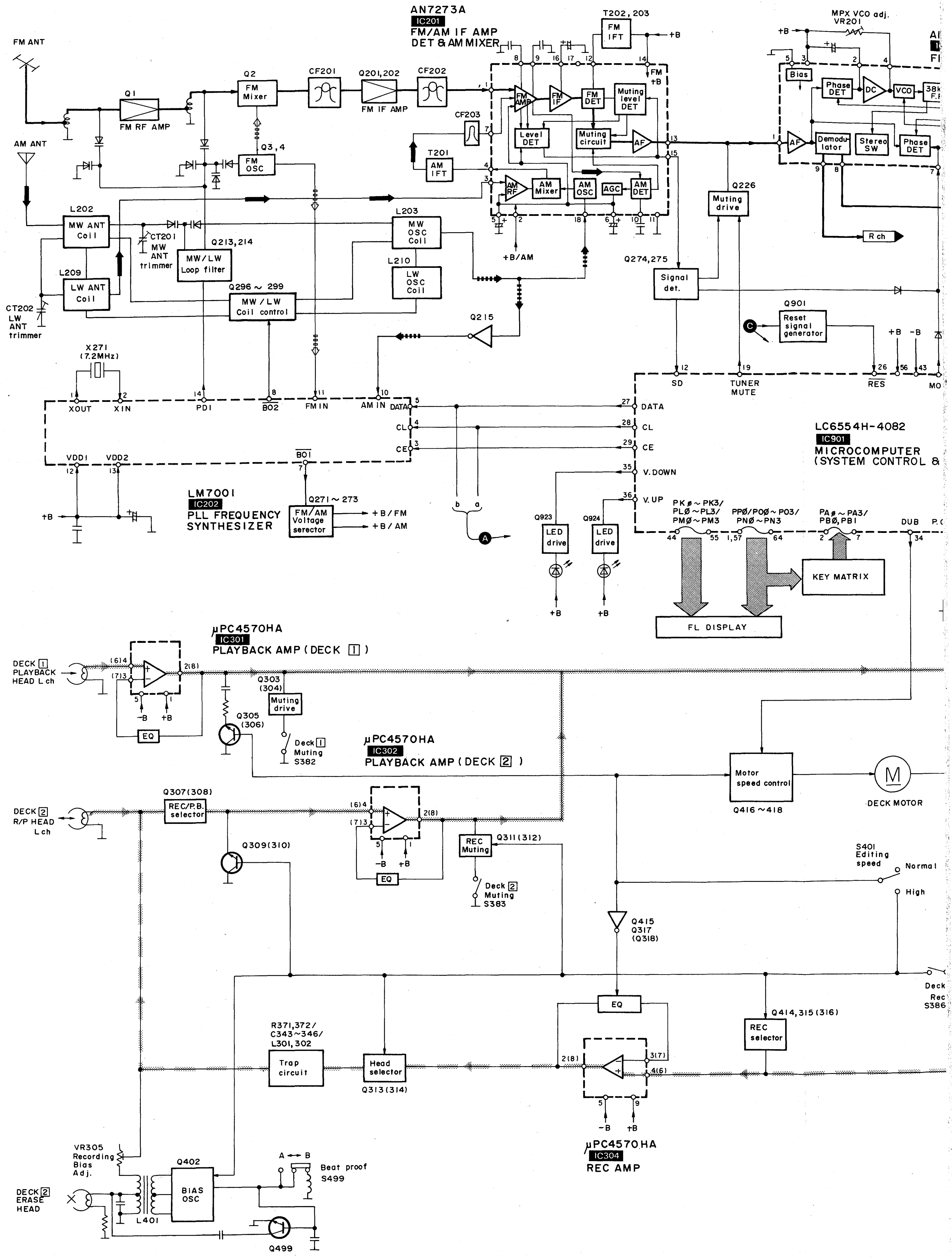
• Pin connection table

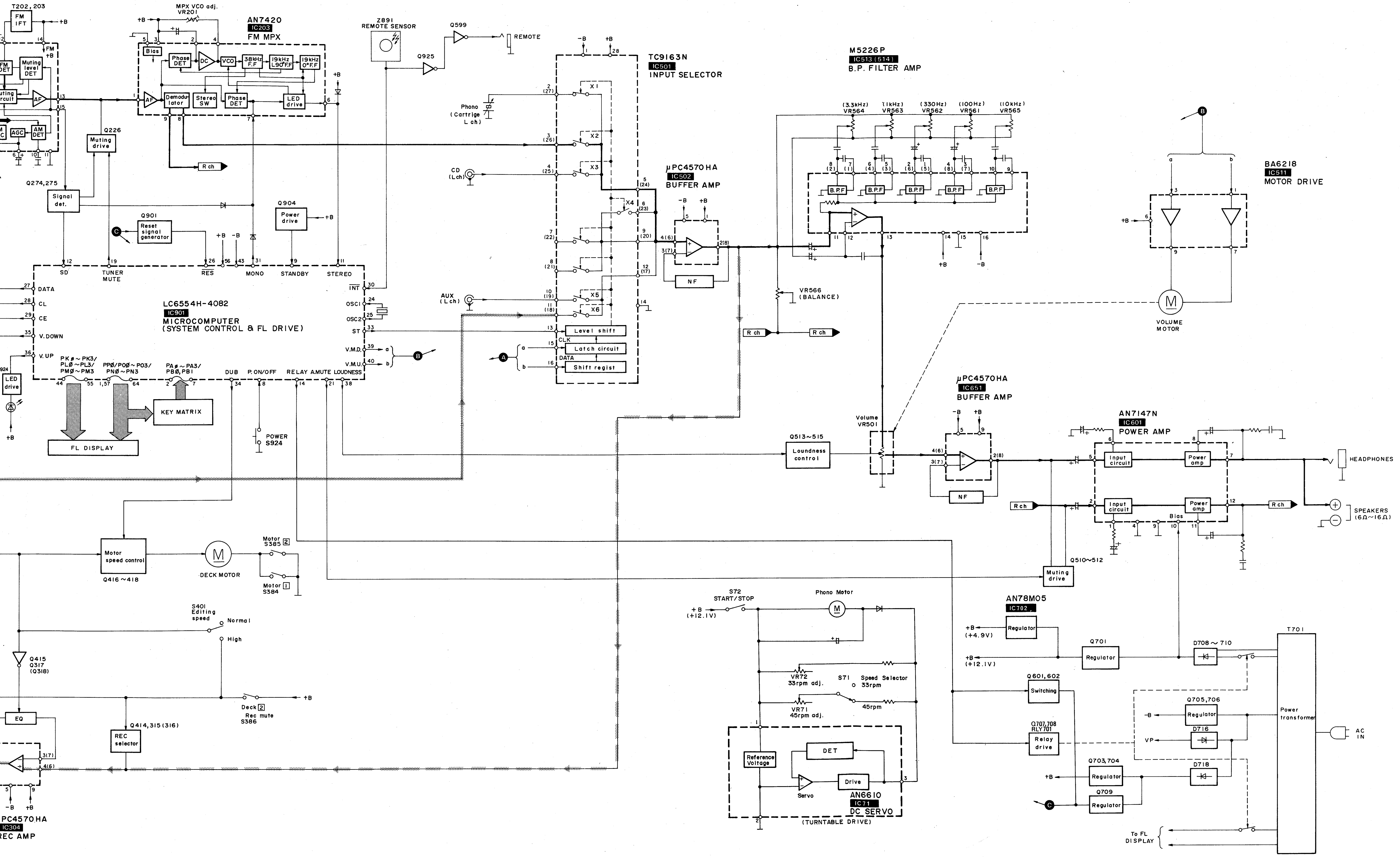
PIN NO.	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	NP	F2	NP	NP	d	c	e	g	f	b	a	ℓ	i	h	j	k	NP	NP	NP	NP	NP	NP	2G	1G	8G	7G	6G	5G	4G	3G	m	NP	NP	F1	NP

• Anode connection table

	8G	7G	6G	5G	4G	3G	2G	1G
a	LW	a	a	a	a	a	-	a
b	CAFM	b	b	b	b	b	b	b
c	-	c	c	c	c	c	c	c
d	-	d	d	d	d	d	d	d
e	-	e	e	e	e	e	e	e
f	-	f	f	f	f	f	f	f
g	stereo	g	g	g	g	g	g	g
h	AM	h	h	h	h	h	quartz lock	■
i	MW	i	i	i	i	i	M	-
j	-	j	j	j	j	j	MHz	-
k	-	k	k	k	k	k	kHz	loudness
ℓ	FM	ℓ	ℓ	ℓ	ℓ	ℓ	-	-
m	-	-	-	DP	-	-	ch.	-

■ BLOCK DIAGRAM


AN7273A
IC201
FM/AM IF AMP
DET & AM MIXER
T202, 203
FM IFT
+B
MPX VCO adj.
VR201
FM ANT
AM ANT
Q1
FM RF AMP
Q2
FM Mixer
CF201
Q201,202
FM IF AMP
CF202
CF203
Q3, 4
FM OSC
T201
AM IFT
FM AMP
FM IF
FM DET
Muting level DET
Level DET
Muting circuit
AF
AM RF
AM Mixer
AM OSC
AGC
AM DET
+B/AM
Bias
Phase DET
DC
VCO
AF
Demodulator
Stereo SW
Phase DET
R ch
Q226
Muting drive
L202
MW ANT Coil
CT201 MW ANT trimmer
Q213,214
MW/LW Loop filter
L203
MW OSC Coil
L210
LW OSC Coil
L209
LW ANT Coil
CT202 LW ANT trimmer
Q296 ~ 299
MW/LW Coil control
Q274,275
Signal det.
Q901
Reset signal generator
Q215
X271 (7.2MHz)
XOUT
XIN
PDI
BO2
FM IN
AM IN
DATA
CL
CE
VDD1
VDD2
BO1
SD
TUNER MUTE
RES
MO
DATA
CL
CE
V.DOWN
V.UP
LM7001
IC202
PLL FREQUENCY SYNTHESIZER
Q271 ~ 273
FM/AM Voltage selector
+B/FM
+B/AM
LC6554H-4082
IC901
MICROCOMPUTER (SYSTEM CONTROL &
Q923
LED drive
Q924
LED drive
PK# ~ PK3/ PLØ ~ PL3/ PMØ ~ PM3
PPØ/POØ ~ PO3/ PNØ ~ PN3
PA# ~ PA3/ PBØ, PB1
DUB
KEY MATRIX
FL DISPLAY
μPC4570HA
IC301
PLAYBACK AMP (DECK 1)
DECK 1 PLAYBACK HEAD L ch
Q303 (304)
Muting drive
Q305 (306)
Deck 1 Muting S382
EQ
μPC4570HA
IC302
PLAYBACK AMP (DECK 2)
Motor speed control
DECK MOTOR
Q416 ~ 418
DECK 2 R/P HEAD L ch
Q307(308)
REC/P.B. selector
Q309(310)
REC Muting
Q311(312)
Deck 2 Muting S383
S401 Editing speed
Normal
High
Q415 Q317 (Q318)
EQ
Q414,315(316)
REC selector
Deck Rec S386
R371,372/ C343~346/ L301,302
Trap circuit
Head selector
Q313(314)
μPC4570HA
IC304
REC AMP
VR305 Recording Bias Adj.
Q402
BIAS OSC
L401
DECK 2 ERASE HEAD
Beat proof S499
Q499


T202, 203
FM IFT
MPX VCO adj.
VR201
AN7420
IC203
FM MPX
Bias
Phase DET
DC
VCO
38kHz F.F
19kHz L90°F.F
19kHz 0°F.F
AF
Demodulator
Stereo SW
Phase DET
LED drive
FM DET
Muting level DET
Muting circuit
AGC
AM DET
Muting drive
Q226
Q274,275
Signal det.
Q901
Reset signal generator
Q904
Power drive
R ch
Z891
REMOTE SENSOR
Q599
Q925
REMOTE
TC9163N
IC501
INPUT SELECTOR
Phono (Cartrige L ch)
CD (L ch)
AUX (L ch)
X1
X2
X3
X4
X5
X6
Level shift
Latch circuit
Shift regist
CLK
DATA
µPC4570HA
IC502
BUFFER AMP
NF
M5226P
IC513 (514)
B.P. FILTER AMP
(3.3kHz) VR564
(1kHz) VR563
(330Hz) VR562
(100Hz) VR561
(10kHz) VR565
B.P.F
VR566 (BALANCE)
BA6218
IC511
MOTOR DRIVE
VOLUME MOTOR
LC6554H-4082
IC901
MICROCOMPUTER
(SYSTEM CONTROL & FL DRIVE)
SD
TUNER MUTE
RES
MONO
STANDBY
STEREO
DATA
CL
CE
V.DOWN
V.UP
INT
OSC1
OSC2
ST
V.M.D.
V.M.U.
PK0~PK3/ PL0~PL3/ PM0~PM3
PP0/PO0~PO3/ PN0~PN3
PA0~PA3/ PB0,PB1
DUB
P.ON/OFF
RELAY
A.MUTE
LOUDNESS
LED drive
KEY MATRIX
FL DISPLAY
POWER S924
Q513~515
Loundness control
Volume VR501
µPC4570HA
IC651
BUFFER AMP
AN7147N
IC601
POWER AMP
Input circuit
Power amp
Bias
HEADPHONES
SPEAKERS (6Ω~16Ω)
Q510~512
Muting drive
Motor speed control
Q416~418
DECK MOTOR
Motor S385 2
Motor S384 1
S401 Editing speed
Normal
High
Q415 Q317 (Q318)
EQ
Deck 2 Rec mute S386
Q414,315 (316)
REC selector
µPC4570HA
IC304
REC AMP
S72 START/STOP
+B (+12.1V)
Phono Motor
VR72 33rpm adj.
S71 Speed Selector
33rpm
VR71 45rpm adj.
45rpm
Reference Voltage
DET
Servo
Drive
AN6610
IC71
DC SERVO
(TURNTABLE DRIVE)
AN78M05
IC702
+B (+4.9V)
Regulator
Q701
Regulator
+B (+12.1V)
D708~710
Q601,602
Switching
Q707,708 RLY701
Relay drive
Q705,706
Regulator
D716
VP
Q703,704
Regulator
D718
Q709
Regulator
T701
Power transformer
AC IN
To FL DISPLAY

SCHEMATIC DIAGRAM

(Parts list on pages 41∼45.)

(This schematic diagram may be modified at any time with the development of new technology.)

Notes:

- **S71** : Player speed selector siwtch in "33" position.
- **S72** : Player start/stop switch in "**stop**" position.
- **S382** : Deck 1 muting switch in "**off**" position.
- **S383** : Deck 2 muting switch in "**off**" position.
- **S384** : Deck 1 motor switch in "**off**" position.
- **S385** : Deck 2 motor switch in "**off**" position.
- **S386** : Rec muting switch in "**off**" position.
- **S401** : Editing (EDITING SPEED) switch in "**normal**" position.
- **S499** : Beat proof (BEAT PROOF) switch.
- **S901** : Tuning (DOWN) switch.
- **S902** : Tuning (UP) switch.
- **S903** : Band (FM) switch.
- **S904** : Band (MW) switch.
- **S905** : FM mode (FM MODE) switch.
- **S906** : Loudness (LOUDNESS) switch.
- **S907, 908, 912∼915, 918∼921** : 24 Channel random preset tuning switch. [S907: 9, S908: 0, S912: 5, S913: 6, S914: 7, S915: 8, S918: 1, S919: 2, S920: 3, S921: 4]
- **S911, 916, 917, 922, 923** : Input selector switch. [S911: AUX, S916: CD, S917: TAPE, S922: PHONO, S923: TUNER]
- **S924** : Power (POWER) switch.
- **S925** : Band (LW) switch.

- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
  - ∗ All voltage values shown in circuitry are DC voltage in FM signal (monaural signal) reception mode.
  - ∗ Figure in ( ) Stand for DC-voltage in AM signal reception mode.
  - ∗ Figure in < > Stand for DC-voltage in playback signal reception mode.
  - ∗ Figure in << >> Stand for DC-voltage in REC signal reception mode.

∗ —< >—	Positive voltage lines	➡	AM (MW/LW) signal
--< >--	Negative voltage lines	▭▭▭⇨	FM OSC signal
■■■■➡	AM (MW/LW) OSC signal	░░░⇨	Phono signal
⇨	FM signal	▨▨▨⇨	Rec signal
░░░⇨	AF signal	➡	PB signal

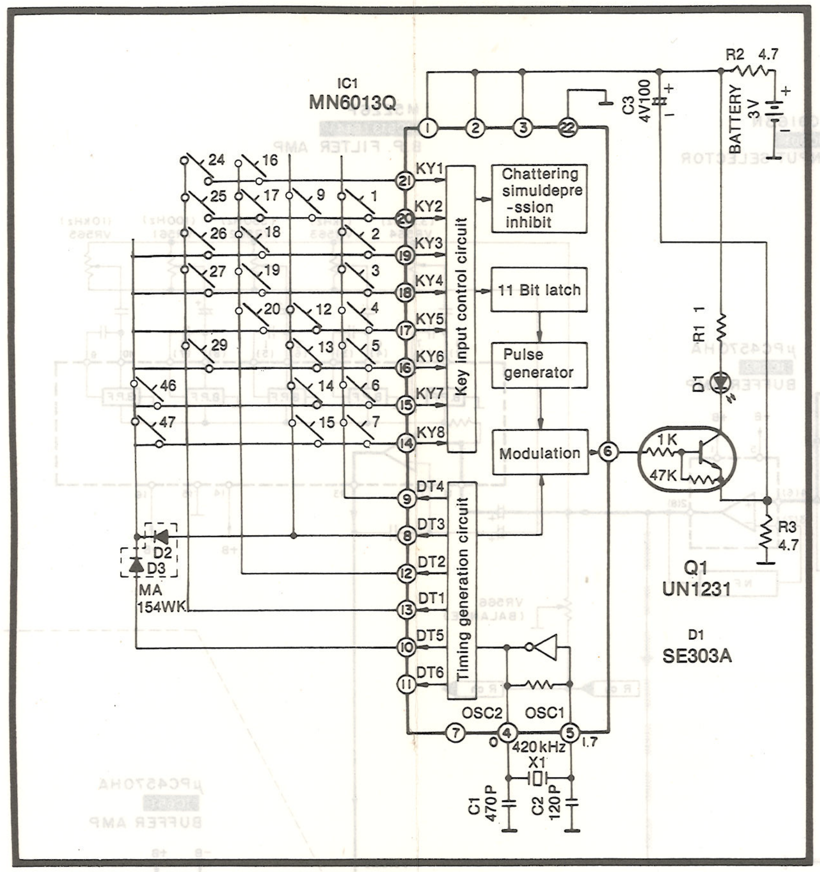
- Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety.
  When replacing any of these components use only manufacturer's specified parts.
- ∗**L5, L6, L7 and L206** are coils formed on the P.C.B. and are thus not found on the replacement parts list.

∗ **Caution**!

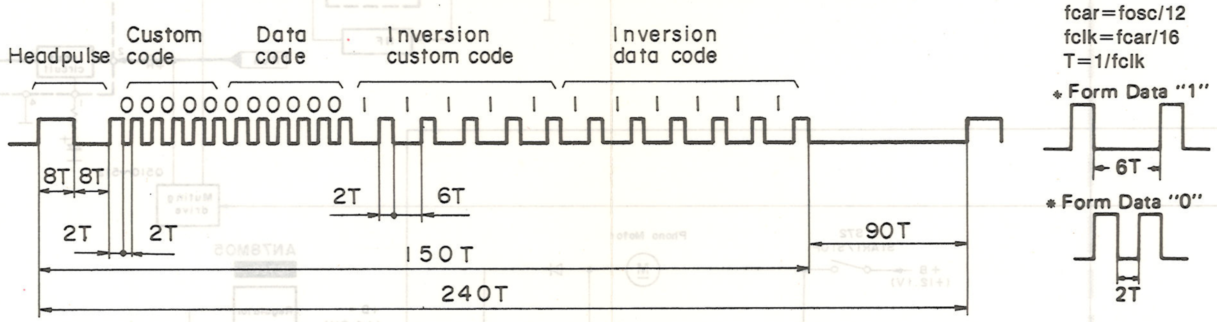
IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.

∗ Cover the parts boxes made of plastics with aluminum foil.
∗ Ground the soldering iron.
∗ Put a conductive mat on the work table.
∗ Do not touch the legs of IC or LSI with the fingers directly.

• Remote-control transmitter

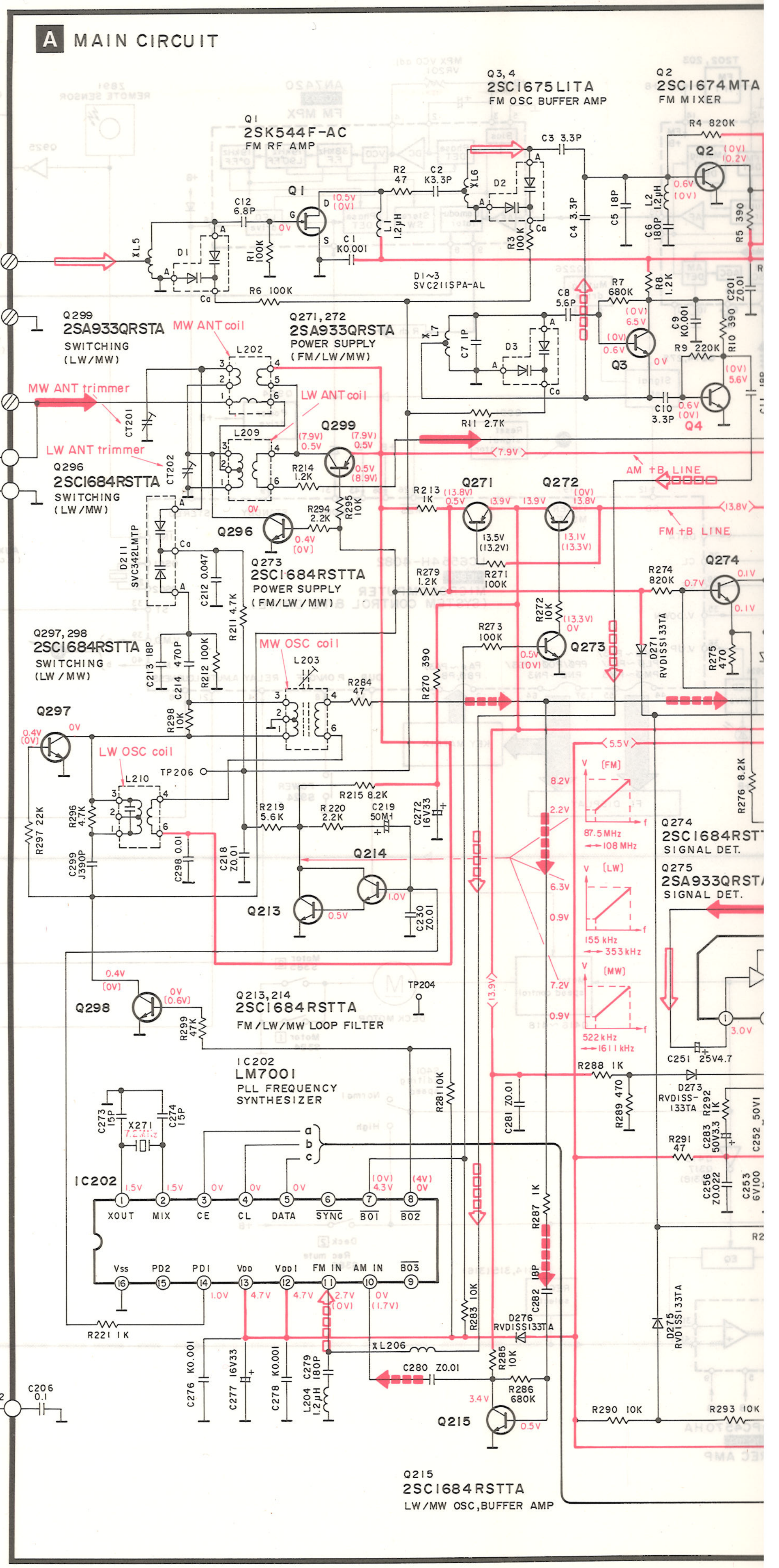

IC1
MN6013Q
KY1
KY2
KY3
KY4
KY5
KY6
KY7
KY8
Key input control circuit
Chattering simuldepre-ssion inhibit
11 Bit latch
Pulse generator
Modulation
DT1
DT2
DT3
DT4
DT5
DT6
Timing generation circuit
OSC2
OSC1
420kHz
X1
C1 470P
C2 120P
C3 4V100
R2 4.7
BATTERY 3V
R1 1
D1
1K
47K
R3 4.7
Q1
UN1231
D1
SE303A
D2
D3
MA 154WK

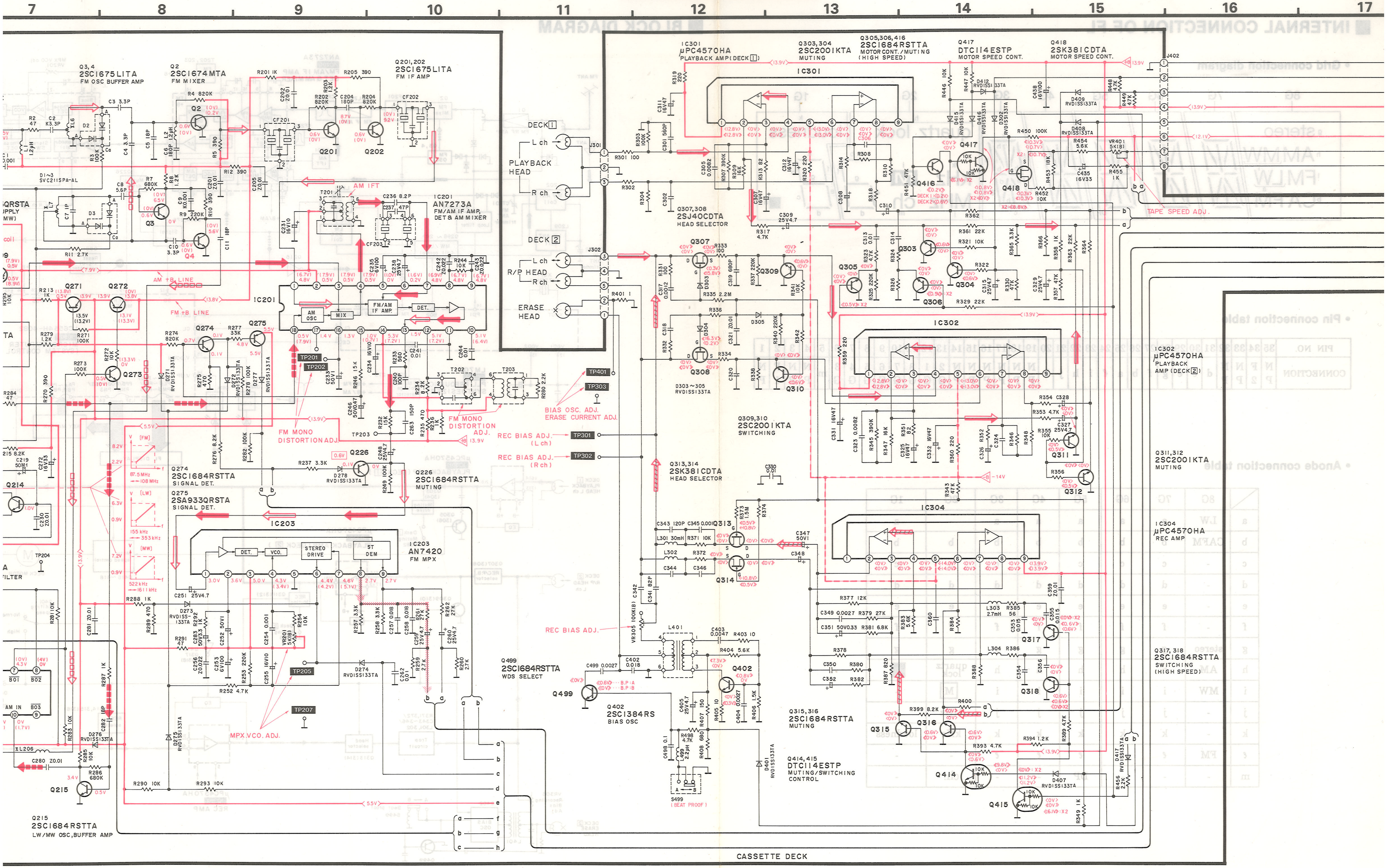
• Key number description and data code of remote-control transmitter

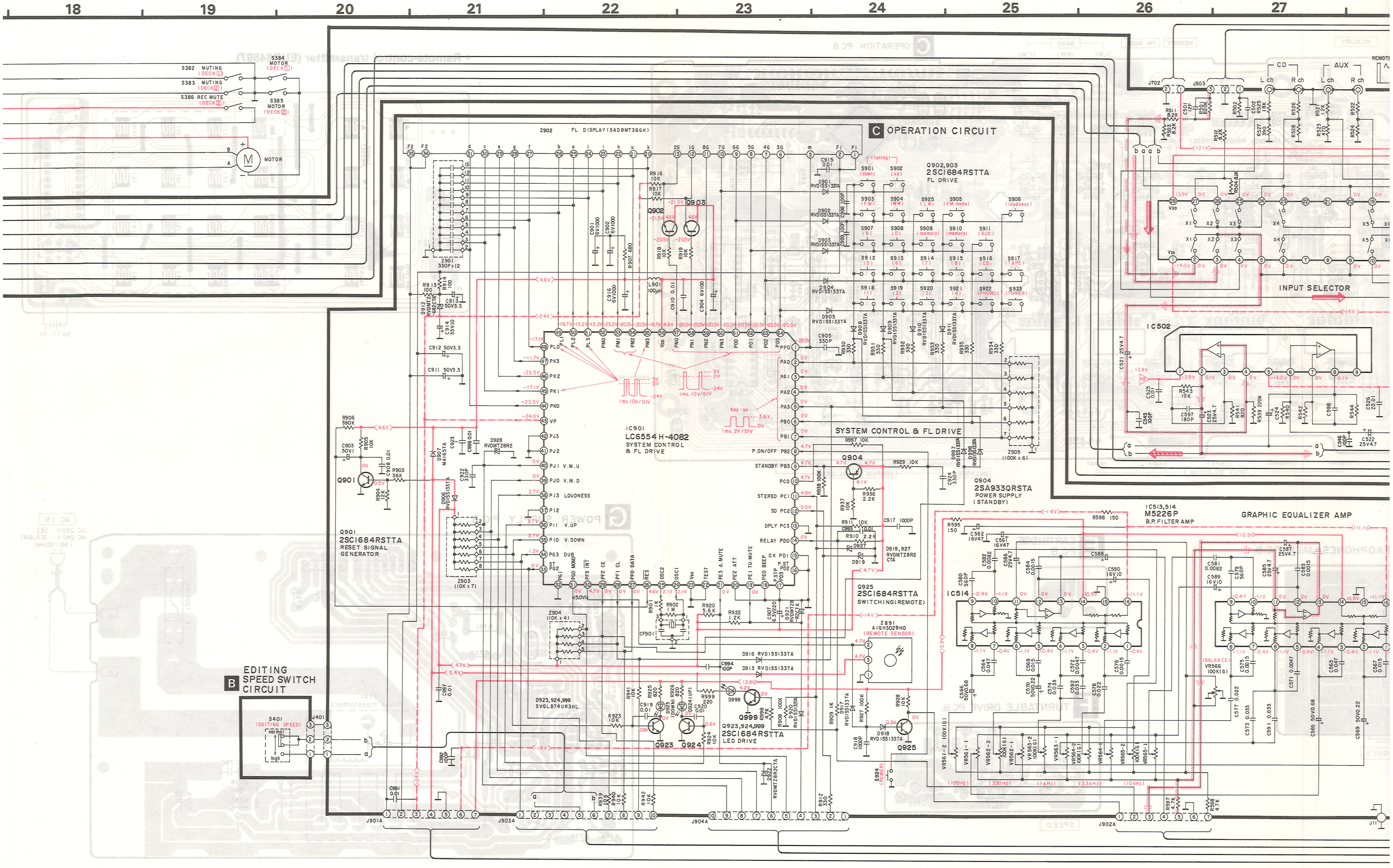

Headpulse
Custom code
Data code
Inversion custom code
Inversion data code
8T
8T
2T
2T
2T
6T
150T
90T
240T
Form Data "1"
6T
Form Data "0"
2T

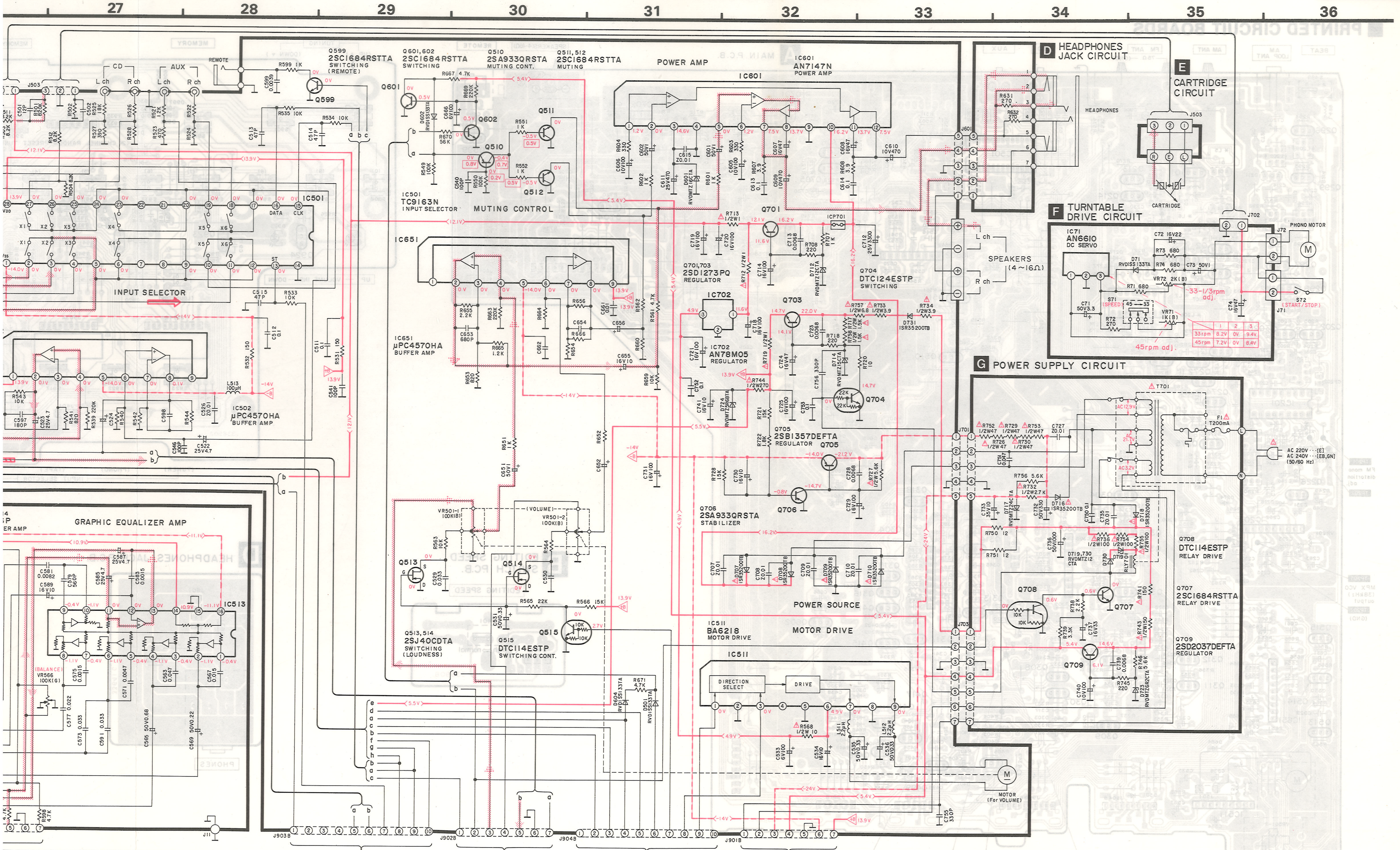
fosc=420kHz
fcar=fosc/12
fclk=fcar/16
T=1/fclk

Key No.	Command	Custom code	Data code	Key No.	Command	Custom code	Data code
1	Volume Down	01001	100101	16	8	01100	010111
2	Volume Up	01001	100100	17	9	01100	011000
3	Power ON/OFF	01001	100000	18	10	01100	011001
4	+10	01100	011010	19	PROGRAM	01100	011101
5	1	01100	010000	20	PHONO	01001	001100
6	2	01100	010001	24	PLAY ▶	01100	001010
7	3	01100	010010	25	STOP ■	01100	000000
9	AUX	01001	111110	26	SKIP ◀◀	01100	000010
12	4	01100	010011	27	SKIP ▶▶	01100	000011
13	5	01100	010100	29	TAPE	01001	001010
14	6	01100	010101	46	PRESET UP	01001	100010
15	7	01100	010110	47	PRESET DOWN	01001	100011


A MAIN CIRCUIT
Q1 2SK544F-AC FM RF AMP
Q3,4 2SC1675LITA FM OSC BUFFER AMP
Q2 2SC1674MTA FM MIXER
FM ANT.
75Ω
GND
AM ANT.
AM LOOP ANT
Q299 2SA933QRSTA SWITCHING (LW/MW)
Q271,272 2SA933QRSTA POWER SUPPLY (FM/LW/MW)
Q296 2SC1684RSTTA SWITCHING (LW/MW)
Q273 2SC1684RSTTA POWER SUPPLY (FM/LW/MW)
Q297,298 2SC1684RSTTA SWITCHING (LW/MW)
Q213,214 2SC1684RSTTA FM/LW/MW LOOP FILTER
IC202 LM7001 PLL FREQUENCY SYNTHESIZER
Q215 2SC1684RSTTA LW/MW OSC,BUFFER AMP
Q274 2SC1684RST SIGNAL DET.
Q275 2SA933QRST SIGNAL DET.
MW ANT coil
MW ANT trimmer
LW ANT trimmer
LW ANT coil
MW OSC coil
LW OSC coil
D1~3 SVC211SPA-AL
D211 SVC342LMTP
AM +B LINE
FM +B LINE
XOUT MIX CE CL DATA SYNC BO1 BO2
Vss PD2 PD1 VDD VDD1 FM IN AM IN BO3
X271
J12
TP206
TP204
XL206

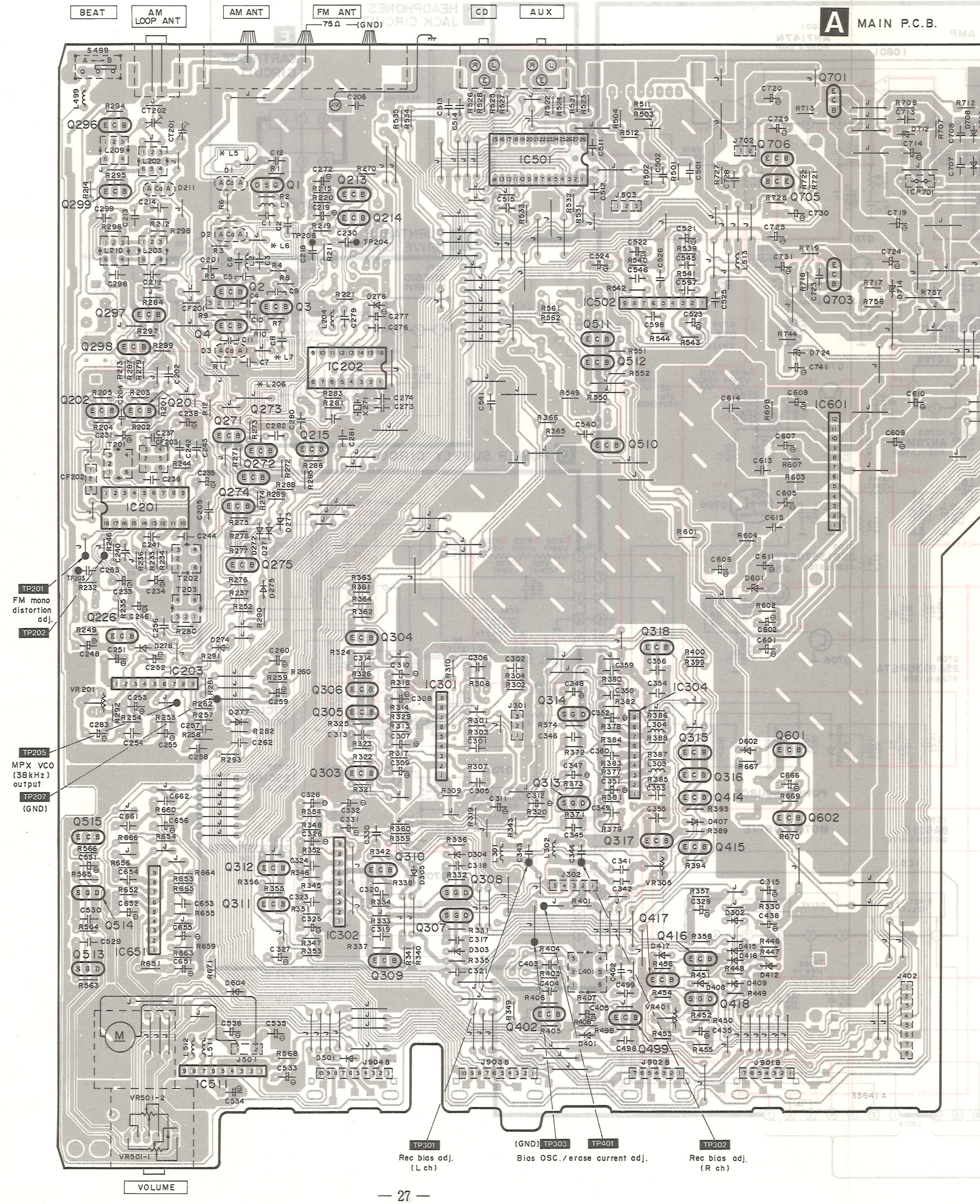

7
8
9
10
11
12
13
14
15
16
17
Q3, 4
2SC1675LITA
FM OSC BUFFER AMP
Q2
2SC1674MTA
FM MIXER
Q201, 202
2SC1675LITA
FM IF AMP
D1~3
SVC211SPA-AL
AM IFT
IC201
AN7273A
FM/AM IF AMP,
DET & AM MIXER
AM OSC
MIX
FM/AM IF AMP.
DET.
AM +B LINE
FM +B LINE
Q271
Q272
Q273
Q274
Q275
Q201
Q202
Q226
Q214
Q215
TP201
TP202
TP203
TP204
TP205
TP207
T201
T202
T203
CF201
CF202
CF203
FM MONO DISTORTION ADJ.
FM MONO DISTORTION ADJ.
Q274
2SC1684RSTTA
SIGNAL DET.
Q275
2SA933QRSTA
SIGNAL DET.
Q226
2SC1684RSTTA
MUTING
IC203
AN7420
FM MPX
DET.
VCO.
STEREO DRIVE
ST DEM
MPX.VCO. ADJ.
87.5 MHz
108 MHz
155 kHz
353 kHz
522 kHz
1611 kHz
(FM)
(LW)
(MW)
Q215
2SC1684RSTTA
LW/MW OSC,BUFFER AMP
AM IN
B01
B02
B03
L206
DECK 1
L ch
PLAYBACK HEAD
R ch
J301
DECK 2
R/P HEAD
J302
ERASE HEAD
TP401
TP303
BIAS OSC. ADJ.
ERASE CURRENT ADJ.
REC BIAS ADJ. (L ch)
TP301
REC BIAS ADJ. (R ch)
TP302
REC BIAS ADJ.
IC301
μPC4570HA
PLAYBACK AMP (DECK 1)
Q303, 304
2SC2001KTA
MUTING
Q305, 306, 416
2SC1684RSTTA
MOTOR CONT./MUTING (HIGH SPEED)
Q417
DTC114ESTP
MOTOR SPEED CONT.
Q418
2SK381CDTA
MOTOR SPEED CONT.
J402
TAPE SPEED ADJ.
Q307, 308
2SJ40CDTA
HEAD SELECTOR
Q307
Q308
Q309
Q310
D303~305
RVD1SS133TA
Q309, 310
2SC2001KTA
SWITCHING
Q313, 314
2SK381CDTA
HEAD SELECTOR
Q313
Q314
IC302
μPC4570HA
PLAYBACK AMP (DECK 2)
Q311, 312
2SC2001KTA
MUTING
IC304
μPC4570HA
REC AMP
Q317, 318
2SC1684RSTTA
SWITCHING (HIGH SPEED)
Q315, 316
2SC1684RSTTA
MUTING
Q414, 415
DTC114ESTP
MUTING/SWITCHING CONTROL
Q499
2SC1684RSTTA
WDS SELECT
Q402
2SC1384RS
BIAS OSC
L401
S499
(BEAT PROOF)
CASSETTE DECK
a
b
c
d
e
f
g
h

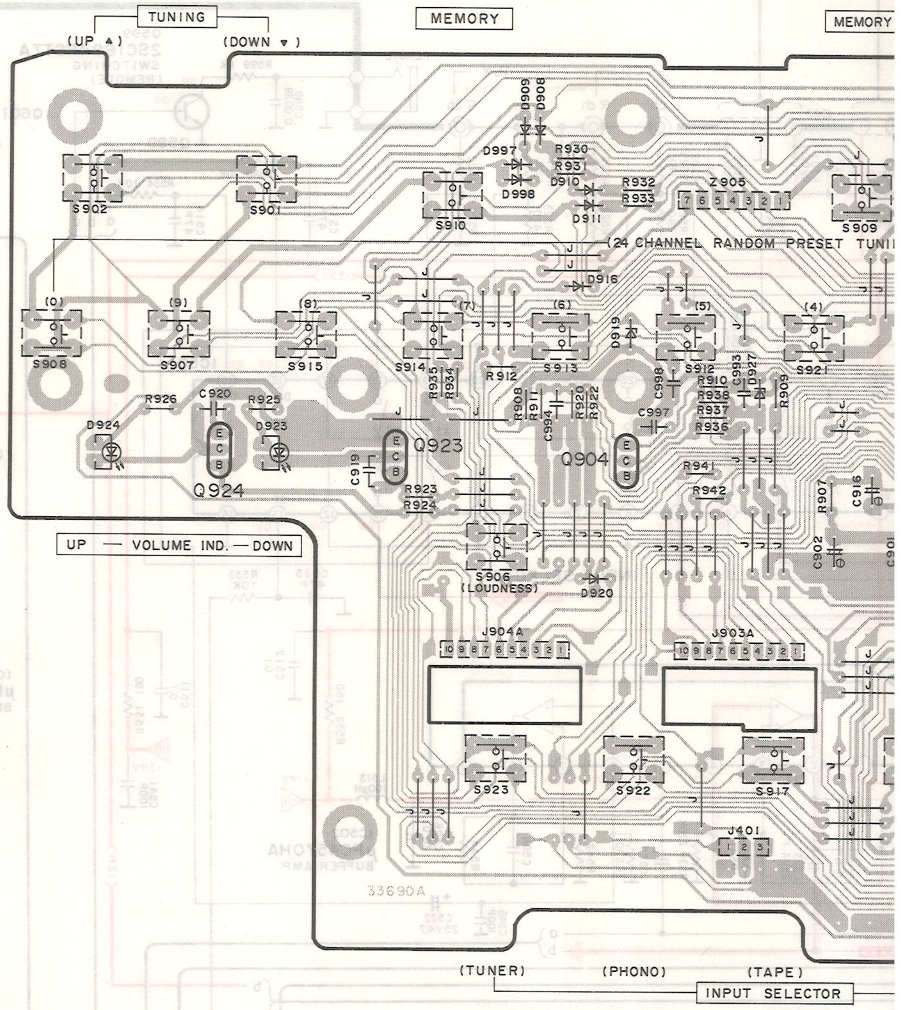

18
19
20
21
22
23
24
25
26
27
S382 MUTING (DECK 1)
S383 MUTING (DECK 2)
S386 REC MUTE (DECK 2)
S384 MOTOR (DECK 1)
S385 MOTOR (DECK 2)
MOTOR
M
Z902 FL DISPLAY (SAD8MT36GK)
C OPERATION CIRCUIT
Z901 330P x 12
Q902,903 2SC1684RSTTA FL DRIVE
Q902
Q903
S901 (down)
S902 (up)
S903 (FM)
S904 (MW)
S925 (LW)
S905 (FM mode)
S906 (loudness)
S907 (9)
S908 (0)
S909 (memory)
S910 (memory)
S911 (AUX)
S912 (5)
S913 (6)
S914 (7)
S915 (8)
S916 (CD)
S917 (TAPE)
S918 (1)
S919 (2)
S920 (3)
S921 (4)
S922 (PHONO)
S923 (TUNER)
IC901 LC6554H-4082 SYSTEM CONTROL & FL DRIVE
SYSTEM CONTROL & FL DRIVE
Z905 (100K x 6)
Q904 2SA933QRSTA POWER SUPPLY (STANDBY)
Q901 2SC1684RSTTA RESET SIGNAL GENERATOR
Z903 (10K x 7)
Z904 (10K x 4)
Q925 2SC1684RSTTA SWITCHING (REMOTE)
Z891 A1QH3029HO (REMOTE SENSOR)
D923,924,999 SVGLB74UR3HL
Q923,924,999 2SC1684RSTTA LED DRIVE
Q923
Q924
Q999
Q925
S924 (POWER)
B EDITING SPEED SWITCH CIRCUIT
S401 (EDITING SPEED)
normal
high
J401
J901A
J903A
J904A
J902A
J11
J702
J503
CD
AUX
L ch
R ch
REMOTE
INPUT SELECTOR
IC502
IC513,514 M5226P B.P. FILTER AMP
GRAPHIC EQUALIZER AMP
IC514
VR561-1
VR561-2
VR562-1
VR562-2
VR563-1
VR563-2
VR564-1
VR564-2
VR565-1
VR565-2
(100Hz)
(330Hz)
(1kHz)
(3.3kHz)
(10kHz)
(BALANCE) VR566 100K(G)
1ms. 10V/DIV
1ms. 2V/DIV
Key-on


27
28
29
30
31
32
33
34
35
36
REMOTE
CD
AUX
L ch
R ch
J503
Q599 2SC1684RSTTA SWITCHING (REMOTE)
Q601,602 2SC1684RSTTA SWITCHING
Q510 2SA933QRSTA MUTING CONT.
Q511,512 2SC1684RSTTA MUTING
POWER AMP
IC601 AN7147N POWER AMP
IC601
Q601
Q602
Q510
Q511
Q512
Q599
IC501
IC501 TC9163N INPUT SELECTOR
MUTING CONTROL
INPUT SELECTOR
DATA
CLK
IC651
IC651 µPC4570HA BUFFER AMP
IC502 µPC4570HA BUFFER AMP
Q701
Q701,703 2SD1273PQ REGULATOR
IC702
IC702 AN78M05 REGULATOR
Q703
Q704 DTC124ESTP SWITCHING
Q704
Q705 2SB1357DEFTA REGULATOR
Q705
Q706 2SA933QRSTA STABILIZER
Q706
GRAPHIC EQUALIZER AMP
IC513
BALANCE VR566 100K(G)
VR501-1 100K(B)
(VOLUME)
VR501-2 100K(B)
Q513
Q514
Q513,514 2SJ40CDTA SWITCHING (LOUDNESS)
Q515 DTC114ESTP SWITCHING CONT.
Q515
POWER SOURCE
MOTOR DRIVE
IC511 BA6218 MOTOR DRIVE
IC511
DIRECTION SELECT
DRIVE
MOTOR (For VOLUME)
M
D HEADPHONES JACK CIRCUIT
HEADPHONES
J601
E CARTRIDGE CIRCUIT
J503
CARTRIDGE
F TURNTABLE DRIVE CIRCUIT
IC71 AN6610 DC SERVO
PHONO MOTOR
J702
J72
J71
S71 (SPEED)
S72 (START/STOP)
VR71 1K(B)
VR72 2K(B)
33-1/3rpm adj.
45rpm adj.
SPEAKERS (4~16Ω)
L ch
R ch
G POWER SUPPLY CIRCUIT
T701
F1 T200mA
AC 220V···(E)
AC 240V···(EB,GN)
(50/60 Hz)
J701
J703
Q708 DTC114ESTP RELAY DRIVE
Q707 2SC1684RSTTA RELAY DRIVE
Q709 2SD2037DEFTA REGULATOR
Q707
Q708
Q709
RY701
J903B
J902B
J904B
J901B
J11

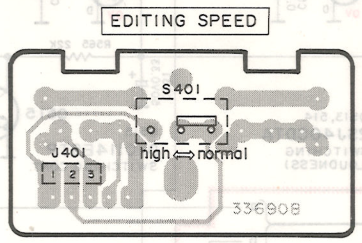
	1	2	3
33rpm	8.2V	0V	9.4V
45rpm	7.2V	0V	8.4V

■ PRINTED CIRCUIT BOARDS

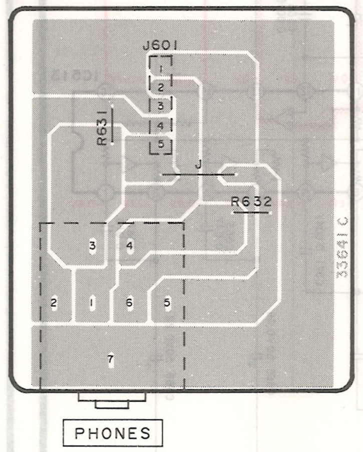

BEAT
AM LOOP ANT
AM ANT
FM ANT
75Ω
(GND)
CD
AUX
A MAIN P.C.B.
SPEAKERS(4~16Ω)
REMOTE
IC501
IC502
IC601
IC202
IC201
IC203
IC301
IC302
IC304
IC651
IC511
IC702
TP201
FM mono distortion adj.
TP202
TP205
MPX VCO (38kHz) output
TP207
(GND)
TP301
Rec bias adj. (L ch)
(GND) TP303
TP401
Bias OSC./erase current adj.
TP302
Rec bias adj. (R ch)
VOLUME
M
336414


TUNING
(UP ▲)
(DOWN ▼)
MEMORY
MEMORY
24 CHANNEL RANDOM PRESET TUNI
UP — VOLUME IND. — DOWN
S906 (LOUDNESS)
J904A
J903A
J401
33690A
(TUNER)
(PHONO)
(TAPE)
INPUT SELECTOR

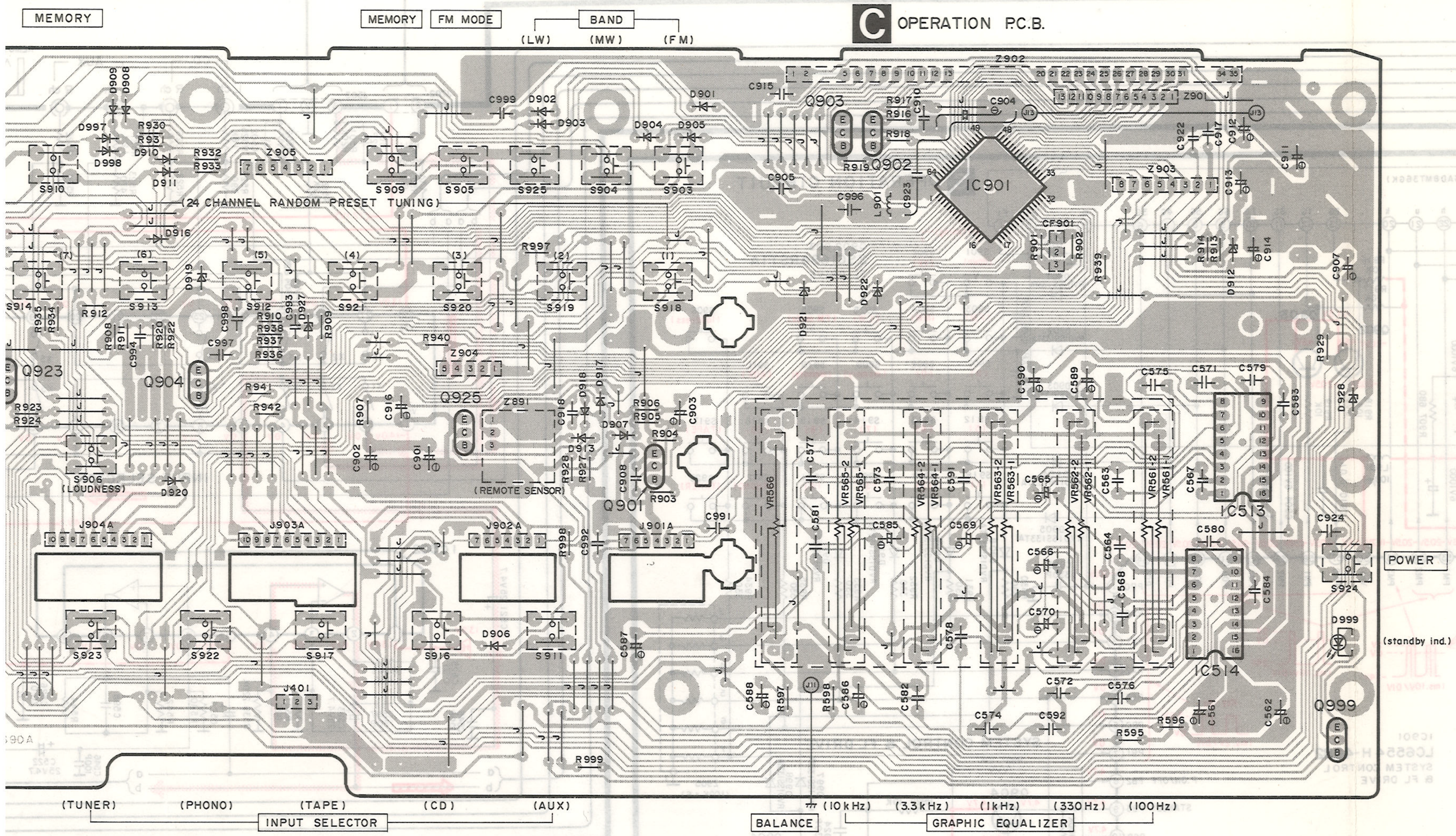
B EDITING SPEED SWITCH P.C.B.


EDITING SPEED
S401
J401
high ⟺ normal
336908

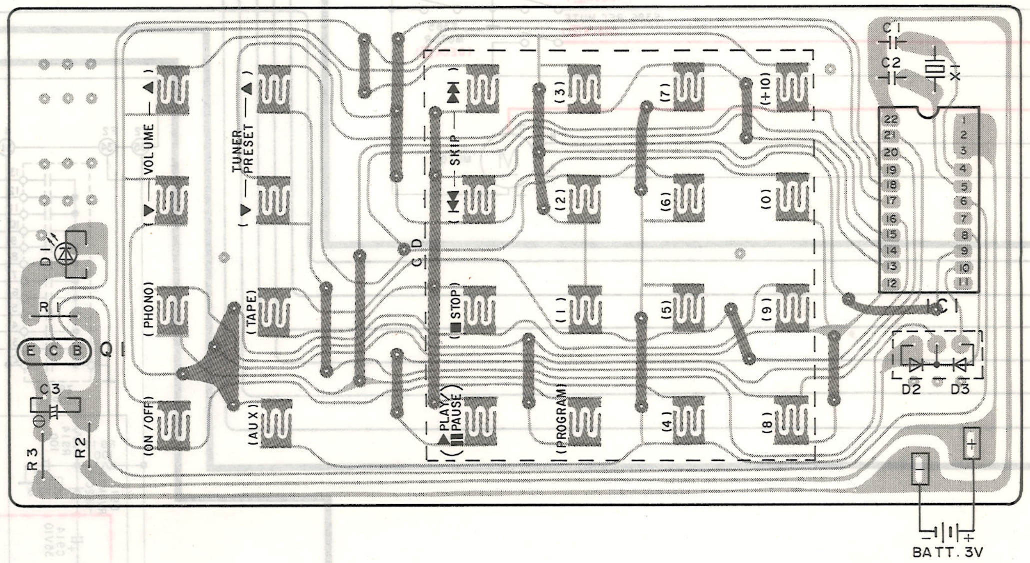
D HEADPHONES JACK P.C.B.


J601
R631
R632
33641C
PHONES

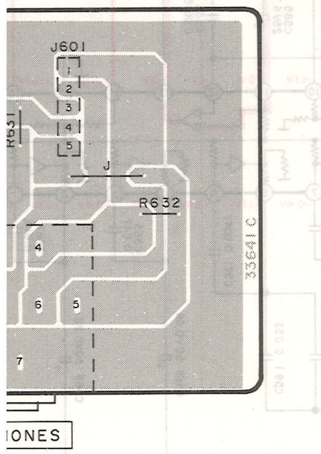
C OPERATION P.C.B.


MEMORY
MEMORY
FM MODE
BAND
(LW)
(MW)
(FM)
Z902
Z901
IC901
Q903
Q902
CF901
(24 CHANNEL RANDOM PRESET TUNING)
S910
S909
S905
S925
S904
S903
S913
S912
S921
S920
S919
S918
S914
S906
(LOUDNESS)
Q923
Q904
Q925
Z891
(REMOTE SENSOR)
Q901
Z904
J904A
J903A
J902A
J901A
S923
S922
S917
S916
S911
J401
VR566
VR565-2
VR565-1
VR564-2
VR564-1
VR563-2
VR563-1
VR562-2
VR562-1
VR561-2
VR561-1
IC513
IC514
POWER
S924
D999
(standby ind.)
Q999
R999
R595
R596
R597
(TUNER)
(PHONO)
(TAPE)
(CD)
(AUX)
INPUT SELECTOR
BALANCE
(10kHz)
(3.3kHz)
(1kHz)
(330Hz)
(100Hz)
GRAPHIC EQUALIZER

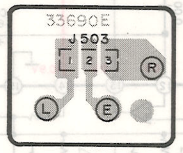
• Remote-control transmitter (EUR64597)


C1
C2
X1
D1
R1
Q1
C3
R2
R3
D2
D3
VOLUME
TUNER PRESET
SKIP
(3)
(7)
(+10)
(2)
(6)
(0)
(PHONO)
(TAPE)
(STOP)
(1)
(5)
(9)
(ON/OFF)
(AUX)
PLAY (PAUSE)
(PROGRAM)
(4)
(8)
BATT. 3V

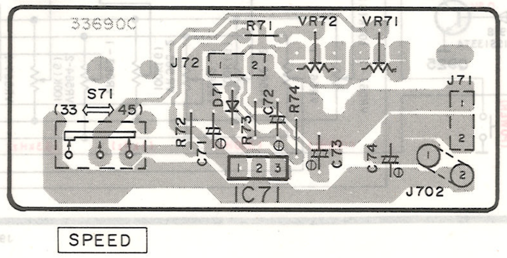
EADPHONES JACK P.C.B.


J601
R631
R632
33641C
IONES

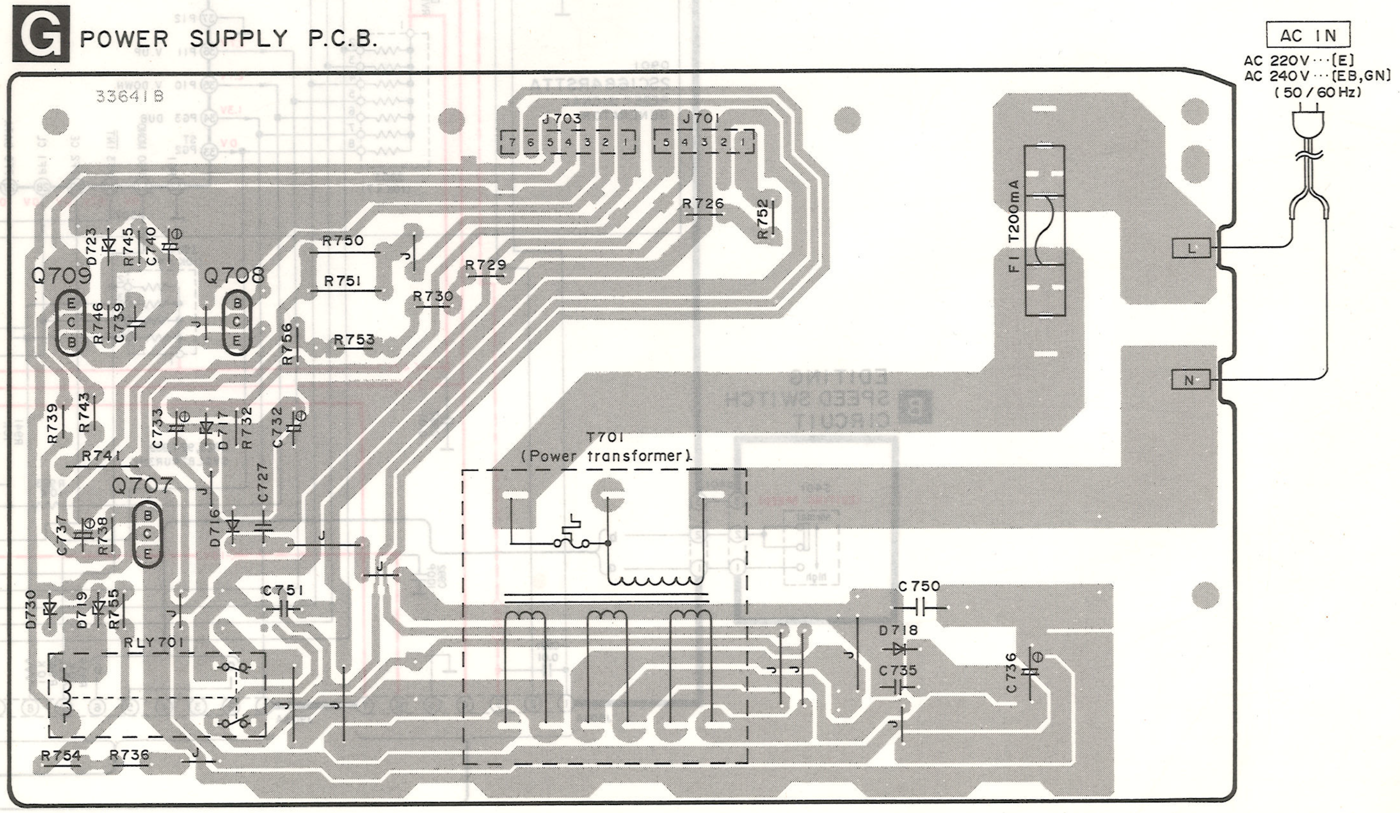
E CARTRIDGE P.C.B.


33690E
J503
R
L
E

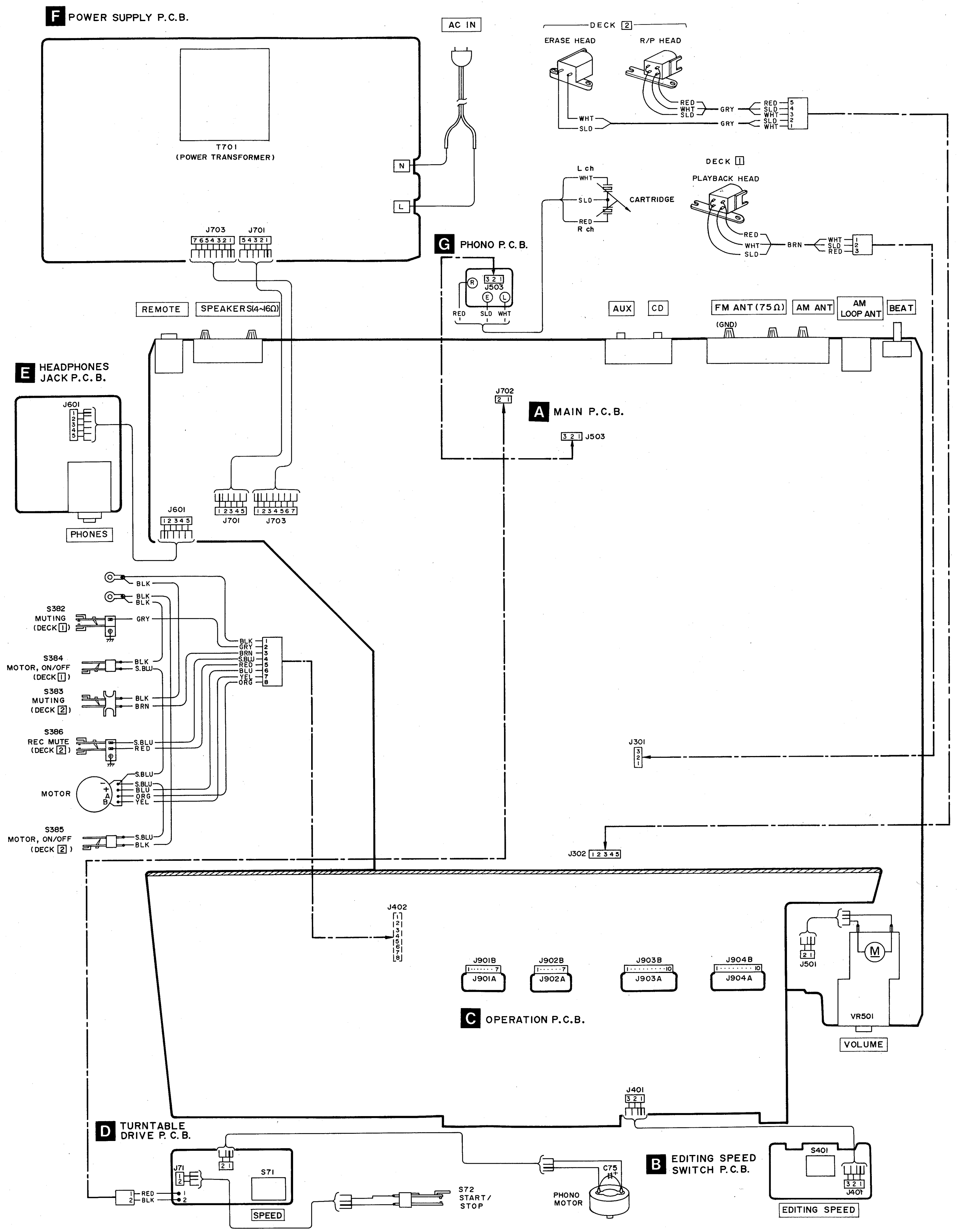
F TURNTABLE DRIVE P.C.B.


33690C
R71
VR72
VR71
J72
J71
S71
(33 ⇔ 45)
R72
C71
D71
R73
C72
R74
C73
C74
IC71
J702
SPEED

G POWER SUPPLY P.C.B.

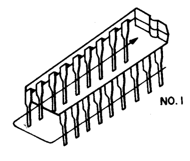

33641B
J703
J701
R726
R752
AC IN
AC 220V ··· (E)
AC 240V ··· (EB, GN)
(50/60Hz)
F1 T200mA
L
N
Q709
Q708
D723
R745
C740
R746
C739
R750
R751
R729
R730
R753
R756
R739
R743
C733
D717
R732
C732
R741
Q707
C727
T701
(Power transformer)
C737
R738
D716
D730
D719
R755
C751
RLY701
C750
D718
C735
C736
R754
R736

■ WIRING CONNECTION DIAGRAM

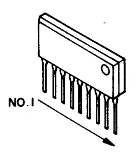

F POWER SUPPLY P.C.B.
T701 (POWER TRANSFORMER)
AC IN
N
L
J703
J701
DECK 2
ERASE HEAD
R/P HEAD
RED
WHT
SLD
GRY
L ch
R ch
CARTRIDGE
DECK 1
PLAYBACK HEAD
BRN
G PHONO P.C.B.
J503
RED SLD WHT
REMOTE
SPEAKERS(4~16Ω)
AUX
CD
FM ANT (75Ω)
(GND)
AM ANT
AM LOOP ANT
BEAT
E HEADPHONES JACK P.C.B.
J601
PHONES
J702
A MAIN P.C.B.
J503
S382 MUTING (DECK 1)
S384 MOTOR, ON/OFF (DECK 1)
S383 MUTING (DECK 2)
S386 REC MUTE (DECK 2)
MOTOR
S385 MOTOR, ON/OFF (DECK 2)
BLK
GRY
BRN
S.BLU
RED
BLU
YEL
ORG
J301
J302
J402
J901B
J901A
J902B
J902A
J903B
J903A
J904B
J904A
J501
VR501
VOLUME
C OPERATION P.C.B.
J401
D TURNTABLE DRIVE P.C.B.
J71
S71
SPEED
S72 START/STOP
PHONO MOTOR
C75
B EDITING SPEED SWITCH P.C.B.
S401
EDITING SPEED

■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

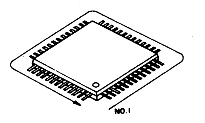
TC9163N	28 PIN
M5226P	16 PIN
LM7001	8 PIN
AN7273A	18 PIN



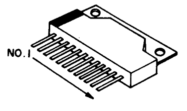
AN7420 BA6218 UPC4570HA	9 PIN



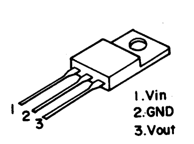
LC6554H-4082	64 PIN

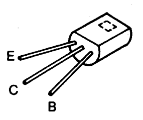


AN7147N	12 PIN



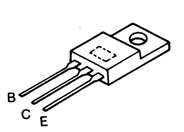
AN78M05


1
2
3
1. Vin
2. GND
3. Vout

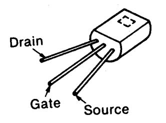


2SC1674MTA
2SC1675LITA
2SC1384RS
2SC1684RSTTA
2SC2001KTA

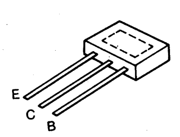
2SD1273PQ



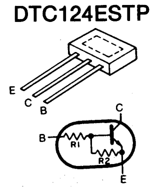
2SJ40CDTA
2SK381CDTA
2SK544F-AC


Drain
Gate
Source

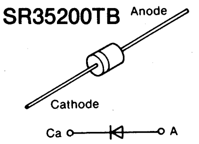
2SA933QRSTA



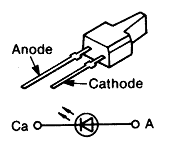
DTC114ESTP
DTC124ESTP

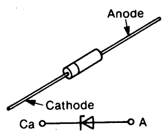

E
C
B
B
R1
R2
C
E

RVD1SS133TA
MA165TA
1SR35200TB


Anode
Cathode
Ca
A

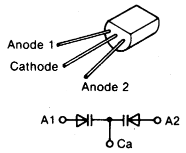
SVGLB74UR3HL


Anode
Cathode
Ca
A

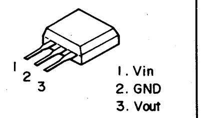

Anode
Cathode
Ca
A

RVDMTZ12CTA
RVDMTZ15CTA
RVDMTZ16CTA
RVDMTZ20CTA
RVDMTZ5R6BTA
RVDMTZ6R2CTA
RVDMTZ8R2CTA

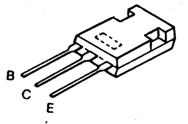
SVC211SPA-AL
SVC342LMTP


Anode 1
Cathode
Anode 2
A1
A2
Ca

AN6610

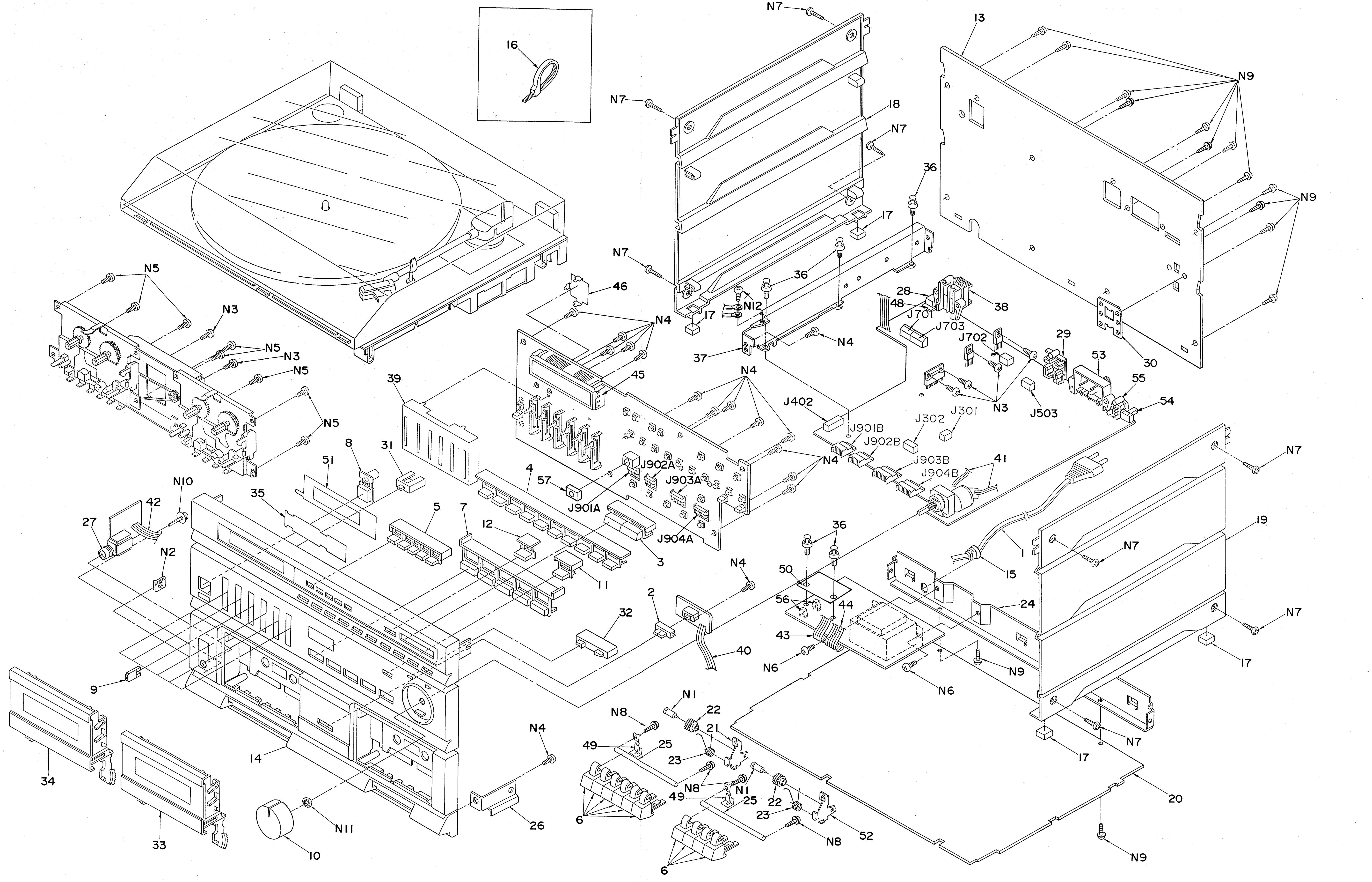

1
2
3
1. Vin
2. GND
3. Vout

2SB1357EFTA
2SD2037EFTA

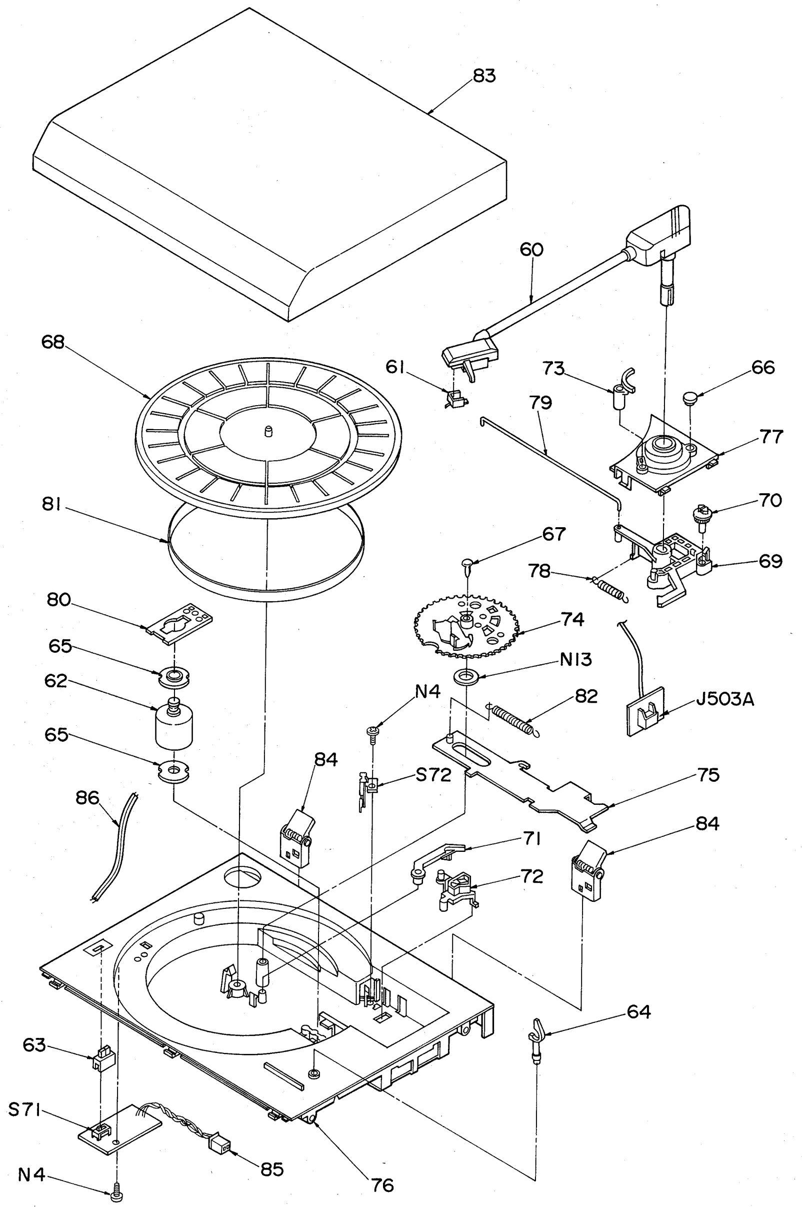


EXPLODED VIEWS (Parts list on pages 36～38.)

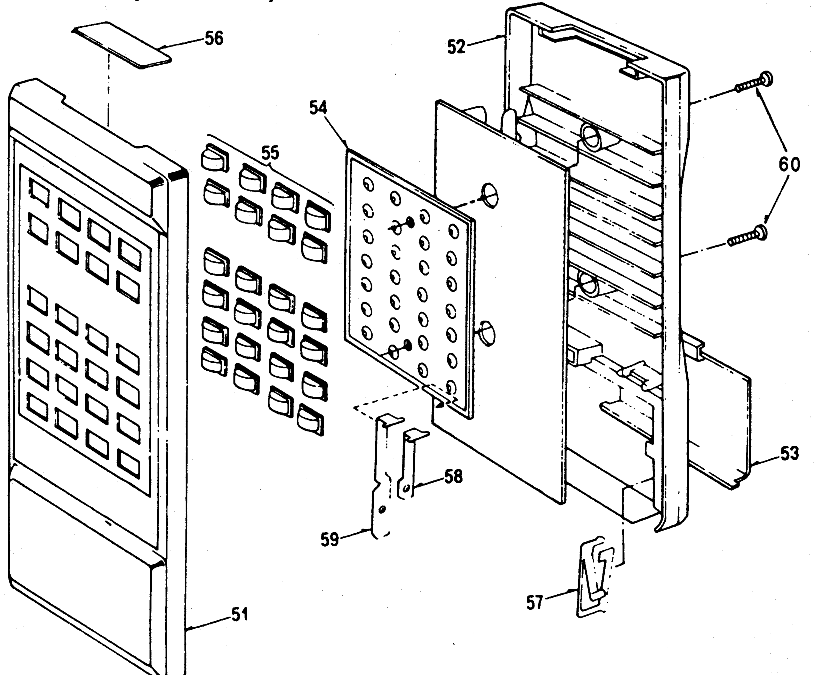
- **Cabinet and chassis**


N7
13
16
N9
N7
18
N7
N9
36
17
N7
36
N5
46
N12
28
38
48
J701
J703
N4
17
N4
N3
N5
N3
37
J702
29
53
30
N5
39
45
N4
55
54
N3
J503
J402
J302
J301
N5
8
31
J901B
J902B
N7
51
N4
J903B
41
J904B
J902A
4
57
J903A
N10
35
J901A
42
27
5
7
12
J904A
36
19
3
N7
N2
1
15
N4
50
11
56
44
24
2
32
43
N7
40
N6
N9
17
N6
9
N1
N8
22
21
49
25
23
14
N4
34
N8
N1
N7
49
25
22
17
23
20
26
6
N11
33
52
N8
10
6
N9

- **Record player**



- **Remote-control transmitter (EUR64597)**



REPLACEMENT PARTS LIST

Notes : * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.When replacing any of these components use only manufacturer's specified parts.
* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.) Parts without these indications can be used for all areas.
* Remote Control Ass'y:
Supply period for three years from termination of production.
* Ⓜ Indicates in Remarks columns parts that are supplied by MESA.

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	SFDAB31E01	POWER CORD	(E) ⚠
1	SFDAB31G01	POWER CORD	(EB) ⚠
1	SJA190	POWER CORD	(GN) ⚠
2	SBN1132	KNOB, EDITING	
3	SBC1068	BUTTON, TUNING	
4	SBC1069-1	BUTTON, TUNING PRESET	Ⓜ
5	SBC1070	BUTTON, BAND SELECTOR	
6	SBC1072	BUTTON, CASSETTE	
7	SBC1077	BUTTON, INPUT SELECTOR	Ⓜ
8	SBC1076	BUTTON, POWER	Ⓜ
9	RBD248YAB-0	KNOB, GEQ BALANCE	Ⓜ
10	SBN1254	KNOB, MAIN VOLUME	
11	SBC1074	BUTTON, SUPER BASS	Ⓜ
12	SBC1075	BUTTON, MEMORY SCAN	Ⓜ
13	SGPGHM30L-E	REAR PANEL ASS'Y	(E) Ⓜ
13	SGPGHM30L-GN	REAR PANEL ASS'Y	(GN) Ⓜ
13	SGP7560A	REAR PANEL	(EB) Ⓜ
14	SGYGHM30L-E	FRONT PANEL ASS'Y	Ⓜ
15	SHR129	SPACER, POWER CORD	(EB)
15	SHR127	SPACER, POWER CORD	(E, GN)
16	SHR301	CLAMPER	
17	SHS3276	FOOT	Ⓜ
18	SKM7840U	SIDE PANEL (L)	Ⓜ
19	SKM7840-2U	SIDE PANEL (R)	Ⓜ
20	SKU11930	BOTTOM BOARD	Ⓜ
21	SMQ30030	BRACKET	
22	SMQ4096	GEAR	
23	SMQ60028	SPRING	Ⓜ
24	SUW3144-1	BRACKET	Ⓜ
25	SUX102	SHAFT	
26	SUW3145	BRACKET	Ⓜ
27	SJJ138	JACK, HEADPHONES	
28	SJJ139B	JACK, CD REMOTE	Ⓜ
29	SJF3071NJ	TERMINAL, INPUT	
30	SUW3007-1	BRACKET	
31	SGL271	PANEL LIGHT	Ⓜ
32	SGL270	PANEL LIGHT	Ⓜ
33	RFKLGHM30LAK	CASSETTE LID ASS'Y	Ⓜ
34	RFKLGHM30LBK	CASSETTE LID ASS'Y	Ⓜ
35	SDU371	FL FILTER	Ⓜ
36	SHR9094	LATCH	
37	SUW3143	BRACKET	Ⓜ

Ref. No.	Part No.	Part Name & Description	Remarks
38	SJF5406	TERMINAL, SPEAKER	
39	SMC1314	GEQ SHIELD PLATE	Ⓜ
40	W3FCK10FF	FLAT CABLE J401	Ⓜ
41	W2FCK12FF	FLAT CABLE J501	Ⓜ
42	W5FCK26FF	FLAT CABLE J601	Ⓜ
43	W5FCK20FR	FLAT CABLE J701	Ⓜ
44	W7FCK20FR	FLAT CABLE J703	Ⓜ
45	SMN2106	FL HOLDER	Ⓜ
46	SMC1315	UCOM SHIELD PLATE	Ⓜ
48	SHR8015	SPACER	Ⓜ
49	SNE1005	BRACKET	Ⓜ
50	SHR8016	INSULATION SHEET	Ⓜ
51	SMC6482	FL SHIELD PLATE	Ⓜ
52	SMQ30056	BRACKET	Ⓜ
53	SJF4317	TERMINAL, ANTENNA	
54	SSS153	SWITCH, BEAT PROOF	
55	SJS208	TERMINAL, LOOP ANTENNA	
56	RJF28ZA	FUSE CLIP	
57	SMC6481	REMOTE SENSOR SHIELD PLATE	Ⓜ
60	SFAB27Z	PICK UP	Ⓜ
61	EPS-41ST	STYLUS	
62	MMNGD16-KM5	PHONO MOTOR	Ⓜ
63	SBN1132	KNOB, SPEED SELECTOR	
64	SJY5218	PICK UP REST	
65	SHG1660	RUBBER	Ⓜ
66	SHG9246-1	RUBBER CAP	
67	SHR417	RIVET	
68	SJYGW7CD-KN2	TURN TABLE ASS'Y	
69	SJY5220	PICK UP FIXING ARM	
70	SJY5221	PICK UP CAM	
71	SJY5222	DRIVE LEVER	
72	SJY5223	PLATE	
73	SJY5224-3	LIFTER	
74	SJYGD16-KM	MAIN GEAR ASS'Y	Ⓜ
75	SJYGH10-KP	PLATE	
76	SJYGHM30L-E	PLAYER BOARD ASS'Y	Ⓜ
77	SKM7860	ARM BASE	Ⓜ
78	SUS786	SPRING	
79	SJY90455	LEVER SPOKE	
80	SJY90456	BRACKET	
81	SJY90080-2	BELT	
82	SJY90406	SPRING	
83	SYE1130	DUST COVER	Ⓜ
84	SBH9383	HINGE	
85	SWKGD16M1	CONNECTOR ASS'Y J702	Ⓜ

Ref. No.	Par
86	W2FCK3
J301	SJT331
J302	SJT351
J402	SJT380
J503A	SJS503
J503	SJT332
J701	SJT305
J702	SJT321
J703	SJT307
J901A	SJT307
J901B	SJS507
J902A	SJT307
J902B	SJS507
J903A	SJT310
J903B	SJS510
J904A	SJT310
J904B	SJS510
N1	SNE212
N2	SNE406
N3	XTB3+8
N4	XTB3+1
N5	XTB3+1
N6	XTB4+8
N7	XTB4+1
N8	XTW3+8
N9	XTW3+1
N10	XTWS3+
N11	XNS7B
N12	XTBS3+
N13	XWE8D1
101	RFU154
102	RFY905
103	RFY906
104	RFY868
105	RFY869
106	RFY870
107	RFY871
108	RFY872
109	RFY907
110	RFS837
111	RFY908
112	RFS813
113	RFX174
114	RFS814
115	RFU155
116	RFS815

REPLACEMENT PARTS LIST

Notes :
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- * The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
  Parts without these indications can be used for all areas.
- * Remote Control Ass'y:
  Supply period for three years from termination of production.
- * 🄼 Indicates in Remarks columns parts that are supplied by MESA.

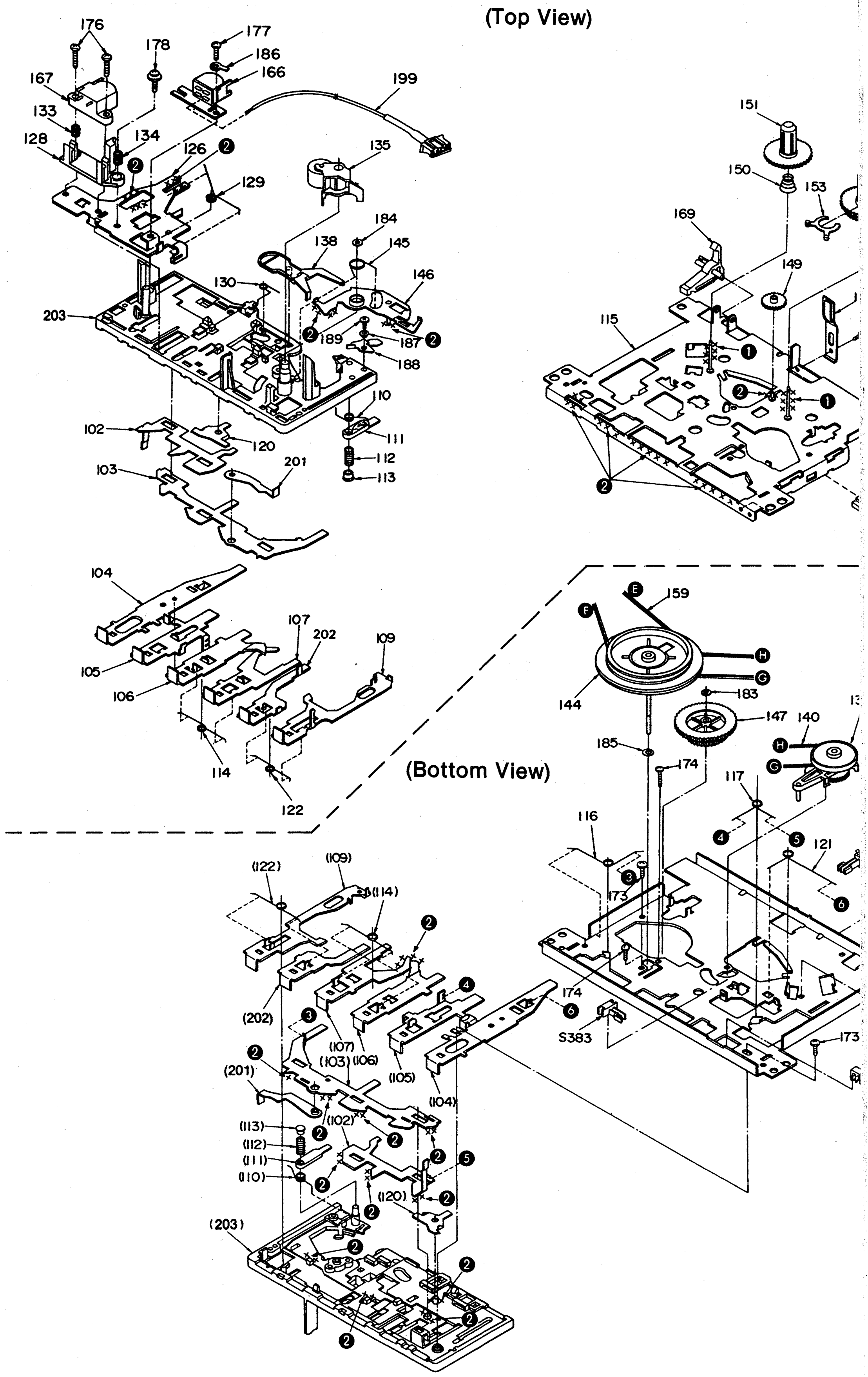
Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
	SFDAB31E01	POWER CORD	(E) ⚠
	SFDAB31G01	POWER CORD	(EB) ⚠
	SJA190	POWER CORD	(GN) ⚠
	SBN1132	KNOB, EDITING	
	SBC1068	BUTTON, TUNING	
	SBC1069-1	BUTTON, TUNING PRESET	🄼
	SBC1070	BUTTON, BAND SELECTOR	
	SBC1072	BUTTON, CASSETTE	
	SBC1077	BUTTON, INPUT SELECTOR	🄼
	SBC1076	BUTTON, POWER	🄼
	RBD248YAB-0	KNOB, GEQ BALANCE	🄼
0	SBN1254	KNOB, MAIN VOLUME	
1	SBC1074	BUTTON, SUPER BASS	🄼
2	SBC1075	BUTTON, MEMORY SCAN	🄼
3	SGPGHM30L-E	REAR PANEL ASS'Y	(E) 🄼
3	SGPGHM30L-GN	REAR PANEL ASS'Y	(GN) 🄼
3	SGP7560A	REAR PANEL	(EB) 🄼
4	SGYGHM30L-E	FRONT PANEL ASS'Y	🄼
5	SHR129	SPACER, POWER CORD	(EB)
5	SHR127	SPACER, POWER CORD	(E, GN)
6	SHR301	CLAMPER	
7	SHS3276	FOOT	🄼
8	SKM7840U	SIDE PANEL (L)	🄼
9	SKM7840-2U	SIDE PANEL (R)	🄼
0	SKU11930	BOTTOM BOARD	🄼
1	SMQ30030	BRACKET	
2	SMQ4096	GEAR	
3	SMQ60028	SPRING	🄼
4	SUW3144-1	BRACKET	🄼
5	SUX102	SHAFT	
6	SUW3145	BRACKET	🄼
7	SJJ138	JACK, HEADPHONES	
8	SJJ139B	JACK, CD REMOTE	🄼
9	SJF3071NJ	TERMINAL, INPUT	
0	SUW3007-1	BRACKET	
1	SGL271	PANEL LIGHT	🄼
2	SGL270	PANEL LIGHT	🄼
3	RFKLGHM30LAK	CASSETTE LID ASS'Y	🄼
4	RFKLGHM30LBK	CASSETTE LID ASS'Y	🄼
5	SDU371	FL FILTER	🄼
6	SHR9094	LATCH	
7	SUW3143	BRACKET	🄼
38	SJF5406	TERMINAL, SPEAKER	
39	SMC1314	GEQ SHIELD PLATE	🄼
40	W3FCK10FF	FLAT CABLE J401	🄼
41	W2FCK12FF	FLAT CABLE J501	🄼
42	W5FCK26FF	FLAT CABLE J601	🄼
43	W5FCK20FR	FLAT CABLE J701	🄼
44	W7FCK20FR	FLAT CABLE J703	🄼
45	SMN2106	FL HOLDER	🄼
46	SMC1315	UCOM SHIELD PLATE	🄼
48	SHR8015	SPACER	🄼
49	SNE1005	BRACKET	🄼
50	SHR8016	INSULATION SHEET	🄼
51	SMC6482	FL SHIELD PLATE	🄼
52	SMQ30056	BRACKET	🄼
53	SJF4317	TERMINAL, ANTENNA	
54	SSS153	SWITCH, BEAT PROOF	
55	SJS208	TERMINAL, LOOP ANTENNA	
56	RJF28ZA	FUSE CLIP	
57	SMC6481	REMOTE SENSOR SHIELD PLATE	🄼
60	SFAB27Z	PICK UP	🄼
61	EPS-41ST	STYLUS	
62	MMNGD16-KM5	PHONO MOTOR	🄼
63	SBN1132	KNOB, SPEED SELECTOR	
64	SJY5218	PICK UP REST	
65	SHG1660	RUBBER	🄼
66	SHG9246-1	RUBBER CAP	
67	SHR417	RIVET	
68	SJYGW7CD-KN2	TURN TABLE ASS'Y	
69	SJY5220	PICK UP FIXING ARM	
70	SJY5221	PICK UP CAM	
71	SJY5222	DRIVE LEVER	
72	SJY5223	PLATE	
73	SJY5224-3	LIFTER	
74	SJYGD16-KM	MAIN GEAR ASS'Y	🄼
75	SJYGH10-KP	PLATE	
76	SJYGHM30L-E	PLAYER BOARD ASS'Y	🄼
77	SKM7860	ARM BASE	🄼
78	SUS786	SPRING	
79	SJY90455	LEVER SPOKE	
80	SJY90456	BRACKET	
81	SJY90080-2	BELT	
82	SJY90406	SPRING	
83	SYE1130	DUST COVER	🄼
84	SBH9383	HINGE	
85	SWKGD16M1	CONNECTOR ASS'Y J702	🄼
86	W2FCK36F	FLAT CABLE J71, 72	🄼
J301	SJT3319	CONNECTOR (3P)	
J302	SJT3511	CONNECTOR (5P)	
J402	SJT3809	CONNECTOR (8P)	
J503A	SJS50378JQ	SOCKET (3P)	
J503	SJT3321	CONNECTOR (3P)	
J701	SJT30543V	CONNECTOR (5P)	🄼
J702	SJT3213	CONNECTOR (2P)	
J703	SJT30743V	CONNECTOR (7P)	🄼
J901A	SJT30747WL	CONNECTOR (7P)	
J901B	SJS50780WL	SOCKET (7P)	
J902A	SJT30747WL	CONNECTOR (7P)	
J902B	SJS50780WL	SOCKET (7P)	
J903A	SJT31047WL	CONNECTOR (10P)	
J903B	SJS51080WL	SOCKET (10P)	
J904A	SJT31047WL	CONNECTOR (10P)	
J904B	SJS51080WL	SOCKET (10P)	
		SCREWS, NUTS AND WASHERS	
N1	SNE2120	NUT	
N2	SNE4060	U NUT	
N3	XTB3+8J	SCREW	
N4	XTB3+10G	SCREW	
N5	XTB3+10GFR	SCREW	
N6	XTB4+8F	SCREW	
N7	XTB4+12JFZ	SCREW	
N8	XTW3+8T	SCREW	
N9	XTW3+10T	SCREW	
N10	XTWS3+10Q	SCREW	
N11	XNS7B	SCREW	
N12	XTBS3+8JFZ1	SCREW	
N13	XWE8D14	WASHER	
		MECHANISM PARTS LIST	
101	RFU154ZA	CHASSIS (DECK 1)	
102	RFY905ZA	SWITCH PLATE	🄼
103	RFY906ZA	SWITCH PLATE	🄼
104	RFY868ZA	LEVER (DECK 2)	
105	RFY869ZA	LEVER	
106	RFY870ZA	LEVER	
107	RFY871ZA	FF BUTTON LEVER	
108	RFY872ZA	LEVER (DECK 1)	
109	RFY907ZA	LEVER (DECK 2)	🄼
110	RFS837ZA	SPRING (DECK 2)	
111	RFY908ZA	LEVER (DECK 2)	🄼
112	RFS813ZA	COIL SPRING (DECK 2)	
113	RFX174ZA	SPACER (DECK 2)	
114	RFS814ZA	COIL SPRING	
115	RFU155ZA	CHASSIS	
116	RFS815ZA	COIL SPRING	
117	RFS816ZA	COIL SPRING	
119	RFY844ZA	LEVER (DECK 1)	
120	RFX175ZA	SPACER	
121	RFS817ZA	COIL SPRING (DECK 2)	
122	RFS818ZA	COIL SPRING (DECK 2)	
124	RFS842ZA	SPRING (DECK 1)	🄼
125	RFU157ZA	CHASSIS (DECK 1)	
126	RFU175ZA	CHASSIS (DECK 2)	🄼
127	RFU168ZA	CHASSIS (DECK 1)	
128	RFU167ZA	HEAD PANEL (DECK 2)	
129	RFS830ZA	SPRING	
130	RFS820ZA	COIL SPRING	
133	RFS578ZA	SPRING (DECK 2)	
134	RFS447Z	AZMUTH SPRING	
135	RFR57ZA	ROLLER	
136	RFY909ZA	REC ARM (DECK 2)	🄼
138	RFY884ZA	LEVER	
139	RFQ61ZA	PULLEY	
140	RFB99ZA	BELT	
143	RFF70ZA	FLYWHEEL ASS'Y (DECK 1)	🄼
144	RFF71ZA	FLYWHEEL ASS'Y (DECK 2)	🄼
145	RFS822ZA	COIL SPRING	
146	RFY874ZA	LEVER	
147	RFG136ZA	GEAR	
149	RFG110ZA	GEAR	
150	RFS708ZA	COIL SPRING	
151	RFJ89ZA	REEL ASS'Y	🄼
152	RFJ90ZA	REEL ASS'Y	🄼
153	RFY875ZA	LEVER	
155	RFD404ZA	MOTOR BRACKET	🄼
156	RFI27ZA	MOTOR RUBBER	
157	RFE213ZA	SCREW	
159	RFB102ZA	MAIN BELT	🄼
160	RFI55ZA	RUBBER SPACER	
161	RFI56ZA	RUBBER SPACER	
162	RFY889ZA	LEVER	
164	RFS467ZA	SPRING	
165	RFH21ZA	P HEAD (DECK 1)	
166	RFH22ZA	R/P HEAD (DECK 2)	🄼
167	RFH23ZA	E HEAD (DECK 2)	🄼
169	RFY716ZA	LEVER (DECK 2)	
170	RFE475ZA	SCREW (DECK 2)	
171	XTN2+3B	SCREW	
172	XTN2+4B	SCREW	
173	XSN2+4	SCREW	
174	RFE496ZA	SCREW	
175	XSN2+6	SCREW (DECK 1)	
176	RFE506ZA	SCREW (DECK 2)	🄼
177	RFE498ZA	SCREW	
178	RFE230ZA	SCREW	
179	RFE454ZA	SCREW	
183	RFN83ZA	WASHER	

Ref. No.	Part No.	Part Name & Description	Remarks
184	RFN214ZA	WASHER	
185	RFN122ZA	WASHER	
186	RFE228ZA	TERMINAL	
187	RFY877ZA	COLLER (DECK 2)	
188	RFD396ZA	CHASSIS (DECK 2)	
189	RFE497ZA	SCREW (DECK 2)	
190	RFE453ZA	SCREW	
191	RFY910ZA	LEVER	Ⓜ
192	RFY911ZA	LEVER	Ⓜ
193	RFE239ZA	SCREW	
194	RFX134ZA	COLLER	
195	RFS687ZA	SPRING	
197	RFM162ZA	MOTOR ASS'Y	Ⓜ
199	SWKGH30P2	LEAD WIRE (DECK 2)	Ⓜ
200	SWKGH30P3	LEAD WIRE (DECK 1)	Ⓜ
201	RFY924ZA	LEVER (DECK 2)	Ⓜ
202	RFY925ZA	LEVER (DECK 2)	Ⓜ
203	RFU178ZA	CHASSIS (DECK 2)	
		PACKING MATERIAL	
P1	SPG6476	CARTON BOX	(EB) Ⓜ
P1	SPG6485	CARTON BOX	(E, GN) Ⓜ
P2	SPS5314	PAD(UNDER FRONT)	Ⓜ
P3	SPS5315	PAD(UNDER REAR)	Ⓜ
P4	SPS5312	PAD(TOP FRONT)	Ⓜ
P5	SPS5313	PAD(TOP REAR)	Ⓜ
P6	SPS5316	RAD(T.T SHEET)	Ⓜ
P9	SPS5084	REMOTE CONTROL BOX	Ⓜ
P10	SPP761	PROTECTION COVER	Ⓜ
P12	SHE154	ARM BAND	
P13	XZB28X35A01	POLY SHEET	Ⓜ
P14	SPP746	VINYL BAG	Ⓜ
		ACCESSORIES	
A1	SQX54944	INSTRUCTION MANUAL	(EB, GN) Ⓜ
A1	SQXGHM30L-E	INSTRUCTION MANUAL	(E) Ⓜ
A2	SJY5018-1	EP ADAPTOR	
A3	SSA269	FM ANTENNA	
A4	SPB1163T	LOOP ANTENNA	
		REMOTE CONTROL ASS'Y	
RC1	EUR64597	REMOTE CONTROL UNIT	Ⓜ
		** REMOTE CONTROL PARTS **	
		INTEGRATED CIRCUIT	
IC1	MN6013D	I. C, MICROCOMPUTER	
		TRANSISTOR	
Q1	UN1231	TRANSISTOR	
		DIODES	
D1	LN66-S	L. E. D	
D2	MA154WK	DIODE	
D3	MA154WK	DIODE	
		OSCILLATOR	
X1	CSB420PB1	OSCILLATOR	
		RESISTOR	
R1	ERDS2TJ1R0	C. RESISTOR 1/4W 1	
		CAPACITORS	
C1	ECKF1H471KB	C. CAPACITOR 50V 470P	
C2	ECKF1H121KB	C. CAPACITOR 50V 120P	
C3	ECEA0GK101	E. CAPACITOR 4V 100U	
		MECHANISM PARTS	
51	UR64VCS872	TOP CASE	Ⓜ
52	UR64VCS873	BOTTOM CASE	Ⓜ
53	UR64EC121	COVER, BATTERY	
54	UR64CT122	RUBBER, SWITCH	
55	UR64BT123AA	BUTTON	
56	UR64SB125	PLATE	
57	UR64TD556	BATTERY TERMINAL	Ⓜ
58	UR64TD127	BATTERY TERMINAL (+)	
59	UR64TD557A	BATTERY TERMINAL (-)	Ⓜ
60	XTS26+8GF	SCREW	

EXPLODED VIEWS

- Cassette deck

<DECK 2>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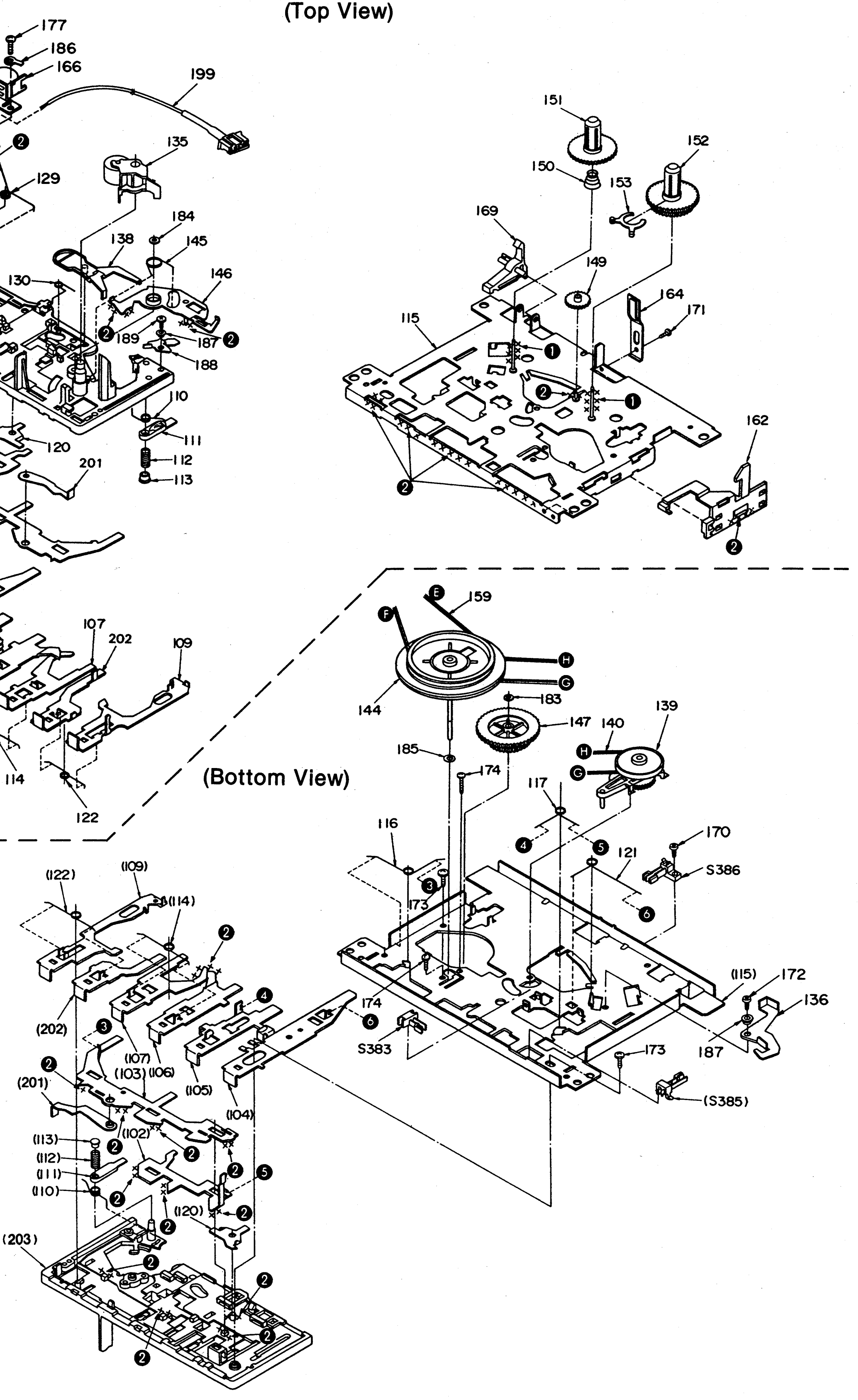
VIEWS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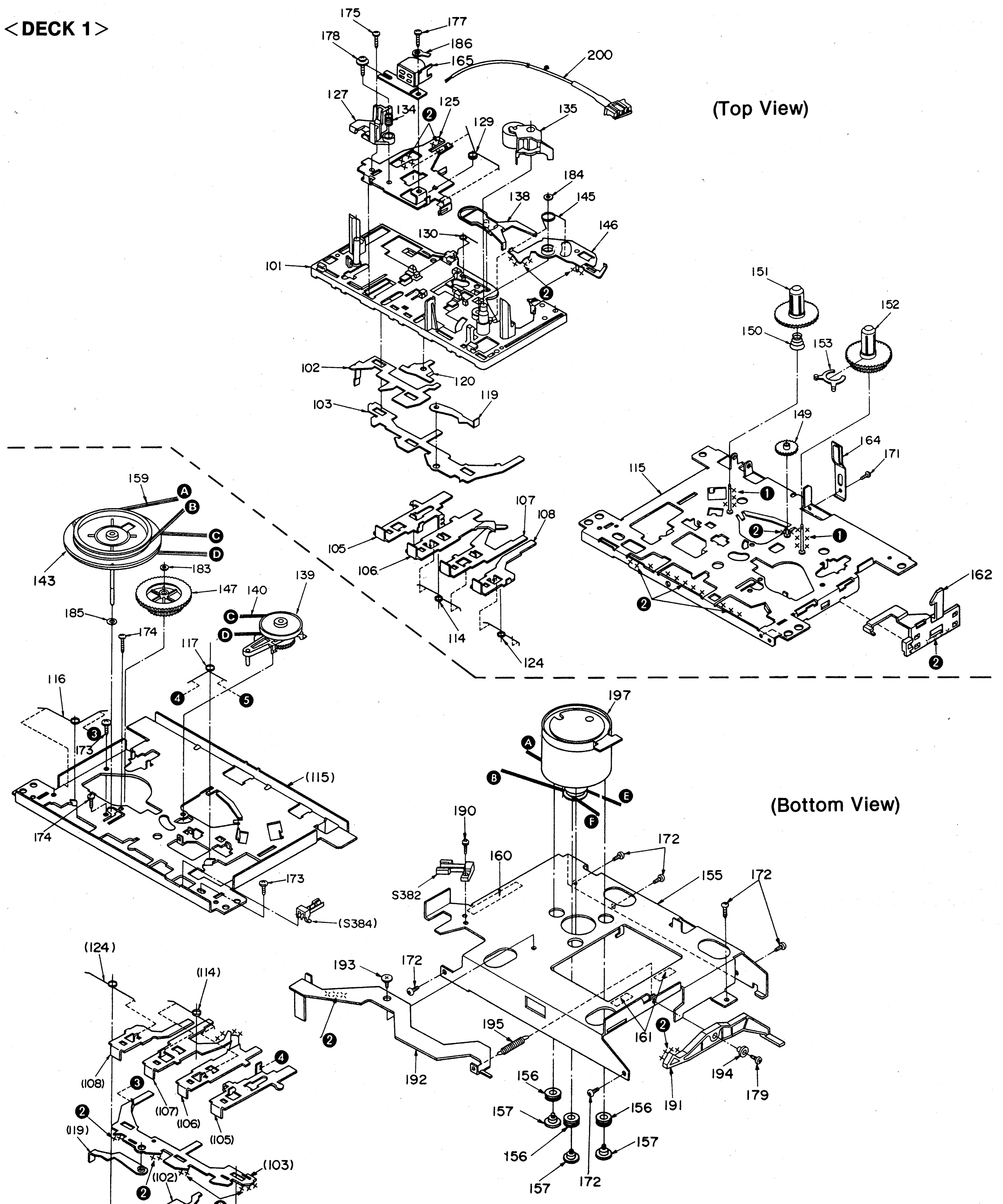
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NOTE

- **When changing mechanism parts apply the specified grease to the area marked "× ×" shown in the drawing "Mechanical Parts Location".**

Ref. No.	PART NAME	PARTS NO.
❶	SILICONE OIL G-40M	SZZOL27
❷	FLOIL G-488M	SZZOL28

REPLACEMENT PARTS LIST

Notes : * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.) Parts without these indications can be used for all areas.
* 🄼 Indicates in Remarks columns parts that are supplied by MESA.

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUITS	
IC71	AN6610	I. C, DC SERVO	
IC201	AN7273A	I. C, FM/AM IF AMP&MIXER	
IC202	LM7001	I. C, PLL FREQ. SYNTHESIZER	
IC203	AN7420	I. C, FM MPX	
IC301	UPC4570HA	I. C, P. B. AMP.	🄼
IC302	UPC4570HA	I. C, P. B. AMP.	🄼
IC304	UPC4570HA	I. C, REC AMP.	🄼
IC501	TC9163N	I. C, INPUT SELECTOR	
IC502	UPC4570HA	I. C, BUFFER AMP.	🄼
IC511	BA6218	I. C, MOTOR DRIVE	
IC513	M5226P	I. C, B. P. F. AMP.	
IC514	M5226P	I. C, B. P. F. AMP.	
IC601	AN7147N	I. C, REGULATOR	
IC651	UPC4570HA	I. C, BUFFER AMP	🄼
IC702	AN78M05	I. C, REGULATOR	
IC901	LC6554H-4082	I. C, MICROCOMPUTER	🄼
		TRANSISTORS	
Q1	2SK544F-AC	TRANSISTOR	
Q2	2SC1674M	TRANSISTOR	
Q3, 4	2SC1675L1TA	TRANSISTOR	🄼
Q201, 202	2SC1675L1TA	TRANSISTOR	🄼
Q213-215	2SC1684RSTTA	TRANSISTOR	🄼
Q226	2SC1684RSTTA	TRANSISTOR	🄼
Q271, 272	2SA933QRSTA	TRANSISTOR	🄼
Q273, 274	2SC1684RSTTA	TRANSISTOR	🄼
Q275	2SA933QRSTA	TRANSISTOR	🄼
Q296-298	2SC1684RSTTA	TRANSISTOR	🄼
Q299	2SA933QRSTA	TRANSISTOR	🄼
Q303, 304	2SC2001KTA	TRANSISTOR	
Q305, 306	2SC1684RSTTA	TRANSISTOR	🄼
Q307, 308	2SJ40CD	TRANSISTOR	
Q309-312	2SC2001KTA	TRANSISTOR	
Q313, 314	2SK381CD	TRANSISTOR	
Q315-318	2SC1684RSTTA	TRANSISTOR	🄼
Q402	2SC1384RS	TRANSISTOR	
Q414, 415	DTC114ESTP	TRANSISTOR	
Q416	2SC1684RSTTA	TRANSISTOR	🄼
Q417	DTC114ESTP	TRANSISTOR	
Q418	2SK381CD	TRANSISTOR	
Q499	2SC1684RSTTA	TRANSISTOR	🄼
Q510	2SA933QRSTA	TRANSISTOR	🄼
Q511, 512	2SC1684RSTTA	TRANSISTOR	🄼
Q513, 514	2SJ40CD	TRANSISTOR	
Q515	DTC114ESTP	TRANSISTOR	
Q599	2SC1684RSTTA	TRANSISTOR	🄼
Q601, 602	2SC1684RSTTA	TRANSISTOR	🄼
Q701	2SD1273-Q	TRANSISTOR	
Q704	DTC124EST	TRANSISTOR	
Q703	2SD1273-Q	TRANSISTOR	
Q705	2SB1357DEFTA	TRANSISTOR	🄼
Q706	2SA933QRSTA	TRANSISTOR	🄼
Q707	2SC1684RSTTA	TRANSISTOR	🄼
Q708	DTC114ESTP	TRANSISTOR	
Q709	2SD2037DEFTA	TRANSISTOR	
Q901-903	2SC1684RSTTA	TRANSISTOR	🄼
Q904	2SA933QRSTA	TRANSISTOR	🄼
Q923-925	2SC1684RSTTA	TRANSISTOR	🄼
Q999	2SC1684RSTTA	TRANSISTOR	🄼
		DIODES	
D1, 3	SVC211SPA-AL	DIODE	
D71	1SS133	DIODE	
D211	SVC342LMTP	DIODE	
D271-278	1SS133	DIODE	
D302-305	1SS133	DIODE	
D401	1SS133	DIODE	
D407-409	1SS133	DIODE	
D412	1SS133	DIODE	
D415-417	1SS133	DIODE	
D501	1SS133	DIODE	
D601	RVDMTZ16CTA	DIODE	🄼
D602	1SS133	DIODE	
D604	1SS133	DIODE	
D707-710	SVD1SR35200A	DIODE	🄼
D714	RVDMTZ15CTA	DIODE	
D712	RVDMTZ12CTA	DIODE	
D716	SVD1SR35200A	DIODE	
D717	RVDMTZ20CTA	DIODE	🄼
D718	SVD1SR35200A	DIODE	
D719	RVDMTZ12C	DIODE	
D723	RVDMTZ6R2CTA	DIODE	🄼
D724	RVDMTZ5R6BTA	DIODE	
D730	RVDMTZ12CTA	DIODE	
D731	SVD1SR35200A	DIODE	
D901-906	1SS133	DIODE	
D907	MA165	DIODE	

Ref. No.	Part No.	Part Name & Description	Remarks
D908-911	1SS133	DIODE	
D912	RVDMTZ6R2CTA	DIODE	🄼
D913	1SS133	DIODE	
D916-918	1SS133	DIODE	
D919	RVDMTZ8R2CTA	DIODE	🄼
D920	1SS133	DIODE	
D921, 922	RVDMTZ8R2CTA	DIODE	🄼
D923, 924	SVGLB74UR3HL	DIODE	
D927, 928	RVDMTZ8R2CTA	DIODE	🄼
D997, 998	1SS133	DIODE	
D999	SVGLB74UR3HL	DIODE	
		I. C. PROTECTOR	
ICP701	SRUF25	IC PROTECTOR	
		VARIABLE RESITORS	
VR71	RVNCA13B1T-A	V. R, (45 RPM)	
VR72	RVNCA23B1T-A	V. R, (33 RPM)	
VR201	RVNCA53B1T-A	V. R, MPX VCO ADJ.	🄼
VR304	RVNCA24B1T-A	V. R, P. B. GAIN ADJ.	🄼
VR305	RVNCA15B1T-A	V. R, REC BIAS ADJ.	🄼
VR401	RVNCA53B1T-A	V. R, TAPE SPEED ADJ.	🄼
VR501	EUWMUGF20B15	V. R, VOLUME CONTROL	🄼
VR561	EWAHQ2C95G15	V. R, EQ CONT. /100Hz	
VR562	EWAHQ2C95G15	V. R, EQ CONT. /330Hz	
VR563	EWAHQ2C95G15	V. R, EQ CONT. /1kHz	
VR564	EWAHQ2C95G15	V. R, EQ CONT. /3. 3kHz	
VR565	EWAHQ2C95G15	V. R, EQ CONT. /10kHz	
VR566	EWAHV2C95G15	V. R, BALANCE CONTROL	🄼
		VARIABLE CAPACITORS	
CT201	ECRLA010A53R	V. C, MW ANT TRIMMER	
CT202	ECRLA020E53R	V. C, LW ANT TRIMMER	
		COILS AND TRANSFORMERS	
L1, 2	RLQZP1R2MT-Y	COIL	🄼
L202	SLA2B3-P	ANTENNA COIL	
L203	SL02B9R-M	OSCILLATOR COIL	🄼
L204	RLQZP1R2MT-Y	COIL	🄼
L209	SLA1B7R-P	COIL	
L210	SL01B5-M	COIL	🄼
L301, 302	SLQX303-1KT	CHOKE COIL	
L303, 304	QLQX2722D	COIL	
L401	SL09C27-M	COIL	🄼
L499	RLQZP2R2MT-Y	MPX COIL	
L511, 512	RLQZP2R2MT-Y	MPX COIL	
L513	RLQZP101KT-Y	MPX COIL	
L901	RLQZP101KT-Y	MPX COIL	

Ref. No.	Part No.	Part Name & Description	Remarks
T201	SLI2B101-M	I. F. T	
T202	SLI4B511-Z	I. F. T	
T203	SLI4B513-Z	I. F. T	
T701	SLT5L296-K	POWER TRANSFORMER	(EB, GN) ⚠ 🄼
T701	SLT5L297-K	POWER TRANSFORMER	(E) ⚠ 🄼
		COMPONENT COMBINATIONS	
Z891	A1QH3029H0	COMBINATION PART	
Z901	EXFP12331MF	COMBINATION PART	
Z903	EXBP87103J-R	COMBINATION PART	
Z904	EXBP84103JR	COMBINATION PART	
Z905	EXBP86104J-R	COMBINATION PART	🄼
		FILTERS	
CF201, 202	SVFE107MS2-A	FILTER	
CF203	SVFSFZ450F7L	FILTER	
CF901	RVBCST4R00MT	FILTER	
		OSCILLATOR	
X271	SVQ49U722-D	CRYSTAL OSCILLATOR	
		DISPLAY	
FL1	SAD8MT36GK	FL DISPLAY TUBE	🄼
		FUSES	
F1	XBA2C02TB0	FUSE	⚠
		SWITCHES	
S71	SSS167	SW, SPEED	
S72	SSP66	SW, START/STOP	
S382	RFA95ZA	SW, MUTING (DECK 1)	🄼
S383	RFA96ZA	SW, MUTING (DECK 2)	🄼
S384	RFA91ZA	SW, MOTOR (DECK 1)	
S385	RFA91ZA	SW, MOTOR (DECK 2)	
S386	RFA94ZA	SW, REC MUTING (DECK 2)	🄼
S401	SSS167	SW, EDITING SPEED	
S901	SSG13	SW (DOWN)	
S902	SSG13	SW (UP)	
S903	SSG13	SW (FM)	
S904	SSG13	SW (MW)	
S905	SSG13	SW (MODE)	
S906	SSG13	SW (LOUDNESS)	
S907	SSG13	SW (No9)	
S908	SSG13	SW (No0)	
S909	SSG13	SW (MEMORY)	

Ref. No.	Part No.	Part Name & Description	Remarks
S910	SSG13	SW (MEMORY SCAN)	
S911	SSG13	SW (VIDEO)	
S912	SSG13	SW (No5)	
S913	SSG13	SW (No6)	
S914	SSG13	SW (No7)	
S915	SSG13	SW (No8)	
S916	SSG13	SW (CD)	
S917	SSG13	SW (TAPE)	
S918	SSG13	SW (No1)	
S919	SSG13	SW (No2)	
S920	SSG13	SW (No3)	
S921	SSG13	SW (No4)	
S922	SSG13	SW (PHONO)	
S923	SSG13	SW (TUNER)	
S924	SSG13	SW (POWER)	
S925	SSG13	SW (LW)	
		RELAY	
RLY701	SSY134	RELAY	

RESISTORS & CAPACITORS

Notes : * Capacity valuse are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
* Resistance values are in ohms, unless specified otherwise, 1K=1,000(OHM) , 1M=1,000k(OHM)

Ref. No.	Part No.	Values & Remarks
		RESISTORS
R1	ERDS2TJ104	1/4W 100K
R2	ERDS2TJ470	1/4W 47
R3	ERDS2TJ104	1/4W 100K
R4	ERDS2TJ824	1/4W 820K
R5	ERDS2TJ391	1/4W 390
R6	ERDS2TJ104	1/4W 100K
R7	ERDS2TJ684	1/4W 680K
R8	ERDS2TJ122	1/4W 1.2K
R9	ERDS2TJ224	1/4W 220K
R10	ERDS2TJ391	1/4W 390
R11	ERDS2TJ272	1/4W 2.7K
R12	ERDS2TJ391	1/4W 390
R71	ERDS2TJ681	1/4W 680
R72	ERDS2TJ271	1/4W 270
R73, 74	ERDS2TJ681	1/4W 680
R201	ERDS2TJ102	1/4W 1.2K
R202	ERDS2TJ824	1/4W 820K
R203	ERDS2TJ122	1/4W 1.2K
R204	ERDS2TJ824	1/4W 820K
R205	ERDS2TJ391	1/4W 390
R211	ERDS2TJ472	1/4W 4.7K
R212	ERDS2TJ104	1/4W 100K
R213	ERDS2TJ101	1/4W 100
R214	ERDS2TJ122	1/4W 1.2K
R215	ERDS2TJ822	1/4W 8.2K
R219	ERDS2TJ562	1/4W 5.6K
R220	ERDS2TJ222	1/4W 2.2K
R221	ERDS2TJ102	1/4W 1.2K
R232	ERDS2TJ153	1/4W 15K
R233	ERDS2TJ561	1/4W 560
R234	ERDS2TJ822	1/4W 8.2K
R235	ERDS2TJ471	1/4W 470
R236	ERDS2TJ102	1/4W 1.2K
R237	ERDS2TJ332	1/4W 3.3K
R244	ERDS2TJ103	1/4W 10K
R246	ERDS2TJ153	1/4W 150K
R249	ERDS2TJ104	1/4W 100K
R252	ERDS2TJ472	1/4W 4.7K
R253	ERDS2TJ224	1/4W 220K
R254	ERDS2TJ103	1/4W 100K
R257, 258	ERDS2TJ332	1/4W 3.3K
R259, 260	ERDS2TJ272	1/4W 2.7K
R261, 262	ERDS2TJ273	1/4W 270K
R270	ERDS2TJ391	1/4W 390
R271	ERDS2TJ104	1/4W 100K
R272	ERDS2TJ103	1/4W 10K
R273	ERDS2TJ104	1/4W 100K
R274	ERDS2TJ824	1/4W 8.2K
R275	ERDS2TJ471	1/4W 470
R276	ERDS2TJ822	1/4W 8.2K
R277	ERDS2TJ333	1/4W 33K
R278	ERDS2TJ104	1/4W 100K
R279, 280	ERDS2TJ122	1/4W 1.2K
R281	ERDS2TJ103	1/4W 10K
R282	ERDS2TJ104	1/4W 100K
R283	ERDS2TJ103	1/4W 10K
R284	ERDS2TJ470	1/4W 470
R285	ERDS2TJ103	1/4W 10K
R286	ERDS2TJ684	1/4W 680K
R287, 288	ERDS2TJ102	1/4W 1K
R289	ERDS2TJ471	1/4W 470
R290	ERDS2TJ103	1/4W 10K
R291	ERDS2TJ470	1/4W 47
R292	ERDS2TJ102	1/4W 1K
R293	ERDS2TJ103	1/4W 10K
R294	ERDS2TJ222	1/4W 2.2K
R295	ERDS2TJ103	1/4W 10K
R296	ERDS2TJ472	1/4W 4.7K
R297	ERDS2TJ223	1/4W 22K
R298	ERDS2TJ103	1/4W 10K
R299	ERDS2TJ473	1/4W 47K
R301, 302	ERDS2TJ101	1/4W 100
R303, 304	ERDS2TJ104	1/4W 100K
R307, 308	ERDS2TJ394	1/4W 390K
R309, 310	ERDS2TJ163	1/4W 16K
R313, 314	ERDS2TJ820	1/4W 82
R317, 318	ERDS2TJ472	1/4W 4.7K
R319, 320	ERDS2TJ221	1/4W 220
R321, 322	ERDS2TJ103	1/4W 10K
R323, 324	ERDS2TJ472	1/4W 4.7K
R325, 326	ERDS2TJ224	1/4W 220K
R329	ERDS2TJ223	1/4W 22K
R330	ERDS2TJ473	1/4W 47K
R331-334	ERDS2TJ101	1/4W 100
R335, 336	ERDS2TJ225	1/4W 2.2M
R337, 338	ERDS2TJ224	1/4W 220K
R340	ERDS2TJ224	1/4W 220K
R341, 342	ERDS2TJ103	1/4W 10K
R343	ERDS2TJ473	1/4W 47K
R345, 346	ERDS2TJ394	1/4W 390K
R347, 348	ERDS2TJ163	1/4W 16K
R349	ERDS2TJ102	1/4W 1K
R351, 352	ERDS2TJ820	1/4W 82
R353, 354	ERDS2TJ472	1/4W 4.7K
R355, 356	ERDS2TJ103	1/4W 10K
R357	ERDS2TJ473	1/4W 47K
R358	ERDS2TJ102	1/4W 1K
R359, 360	ERDS2TJ221	1/4W 220
R361-364	ERDS2TJ223	1/4W 22K
R365, 366	ERDS2TJ332	1/4W 3.3K
R371, 372	ERDS2TJ103	1/4W 10K
R373, 374	ERDS2TJ155	1/4W 1.5M

Ref. No.	Part No.	Values & Remarks
R377, 378	ERDS2TJ123	1/4W 12K
R379, 380	ERDS2TJ273	1/4W 27K
R381, 382	ERDS2TJ682	1/4W 6.8K
R383, 384	ERDS2TJ562	1/4W 5.6K
R385, 386	ERDS2TJ560	1/4W 56
R387, 388	ERDS2TJ821	1/4W 820
R389, 393	ERDS2TJ472	1/4W 4.7K
R394	ERDS2TJ122	1/4W 1.2K
R399, 400	ERDS2TJ822	1/4W 8.2K
R401	ERDS2TJ1R0	1/4W 1
R403	ERDS2TJ100	1/4W 10
R404	ERDS2TJ562	1/4W 5.6K
R405	ERDS2TJ100	1/4W 10
R406	ERDS2TJ152	1/4W 1.5K
R407	ERDS2TJ151	1/4W 150
R408	ERDS2TJ681	1/4W 680
R410	ERDS2TJ102	1/4W 1K
R446, 447	ERDS2TJ103	1/4W 10K
R448, 449	ERDS2TJ472	1/4W 4.7K
R450	ERDS2TJ104	1/4W 100K
R451	ERDS2TJ473	1/4W 47K
R452	ERDS2TJ103	1/4W 10K
R453	ERDS2TJ183	1/4W 18K
R454	ERDS2TJ562	1/4W 5.6K
R455	ERDS2TJ102	1/4W 1K
R456	ERDS2TJ222	1/4W 2.2K
R498	ERDS2TJ472	1/4W 4.7K
R501, 502	ERDS2TJ824TR	1/4W 820K
R503, 504	ERDS2TJ822	1/4W 8.2K
R511, 512	ERDS2TJ822	1/4W 8.2K
R521, 522	ERDS2TJ123	1/4W 12K
R523, 524	ERDS2TJ471	1/4W 470
R525, 526	ERDS2TJ183	1/4W 18K
R527, 528	ERDS2TJ391	1/4W 390
R531, 532	ERDS2TJ151	1/4W 150
R533-535	ERDS2TJ103	1/4W 10K
R539, 540	ERDS2TJ224	1/4W 220K
R541, 542	ERDS2TJ821	1/4W 820
R543, 544	ERDS2TJ103	1/4W 10K
R549, 550	ERDS2TJ104	1/4W 100K
R551, 552	ERDS2TJ102	1/4W 1K
R561, 562	ERDS2TJ472	1/4W 4.7K
R563, 564	ERDS2TJ103	1/4W 10K
R565	ERDS2TJ223	1/4W 22K
R566	ERDS2TJ153	1/4W 15K
R568	ERDS1FJ100	1/2W 10
R595, 596	ERDS2TJ151	1/4W 150
R597, 598	ERDS2TJ472	1/4W 4.7K
R599	ERDS2TJ102	1/4W 1K
R601, 602	ERDS2TJ102	1/4W 1K
R603, 604	ERDS2TJ331	1/4W 330
R607, 608	ERDS2TJ3R9	1/4W 3.9

Ref. No.	Part No.	Values & Remarks
R631, 632	ERDS2TJ271	1/4W 270
R651, 652	ERDS2TJ102	1/4W 1K
R653, 654	ERDS2TJ821	1/4W 820
R655, 656	ERDS2TJ222	1/4W 2.2K
R659, 660	ERDS2TJ103	1/4W 10K
R663, 664	ERDS2TJ224	1/4W 220K
R665, 666	ERDS2TJ122	1/4W 1.2K
R667	ERDS2TJ472	1/4W 4.7K
R669	ERDS2TJ224	1/4W 220K
R670	ERDS2TJ563	1/4W 56K
R671	ERDS2TJ472	1/4W 4.7K
R707	ERDS2TJ102	1/4W 1K
R708	ERDS2TJ221	1/4W 220
R712, 713	ERDS1FVJ1R0T	1/2W 1
R717	ERDS1FJ152	1/2W 1.5K
R718	ERDS2TJ221	1/4W 220
R719	ERDS1FVJ1R0T	1/2W 1
R720	ERDS2TJ100	1/4W 10
R721	ERDS2TJ153	1/4W 15K
R722	ERDS2TJ182	1/4W 1.8K
R726	ERDS1FJ470	1/2W 47
R727	ERDS1FJ562	1/2W 5.6K
R728	ERDS2TJ153	1/4W 15K
R729, 730	ERDS1FJ470	1/2W 47K
R731	ERDS2TJ103	1/4W 10K
R732	ERDS1FJ272	1/4W 2.7K
R733, 734	ERDS1FVJ3R9T	1/2W 3.9
R736	ERDS1FJ101	1/2W 100
R738	ERDS2TJ222	1/4W 2.2K
R739	ERDS2TJ332	1/4W 3.3K
R741	ERD2FCG151	1/4W 150
R743	ERDS1FJ151	1/2W 150
R744	ERDS1FJ271	1/2W 270
R745	ERDS2TJ221	1/4W 220
R746	ERDS2TJ562	1/4W 5.6K
R750, 751	ERD2FCG120	1/4W 12
R752, 753	ERDS1FVJ470	1/2W 47
R754, 755	ERDS1FJ101	1/2W 100
R756	ERDS2TJ562	1/4W 5.6K
R757	ERDS1FJ6R8	1/2W 6.8
R758	ERDS1FJ152	1/4W 1.5K
R901	ERDS2TJ102	1/4W 1K
R902	ERDS2TJ105	1/4W 1M
R903	ERDS2TJ563	1/4W 56K
R904	ERDS2TJ123	1/4W 12K
R905	ERDS2TJ103	1/4W 10K
R906	ERDS2TJ394	1/4W 390K
R907	ERDS2TJ681	1/4W 680
R908	ERDS2TJ104	1/4W 100K
R909	ERDS2TJ102	1/4W 1K
R910	ERDS2TJ222	1/4W 2.2K
R911	ERDS2TJ103	1/4W 10K

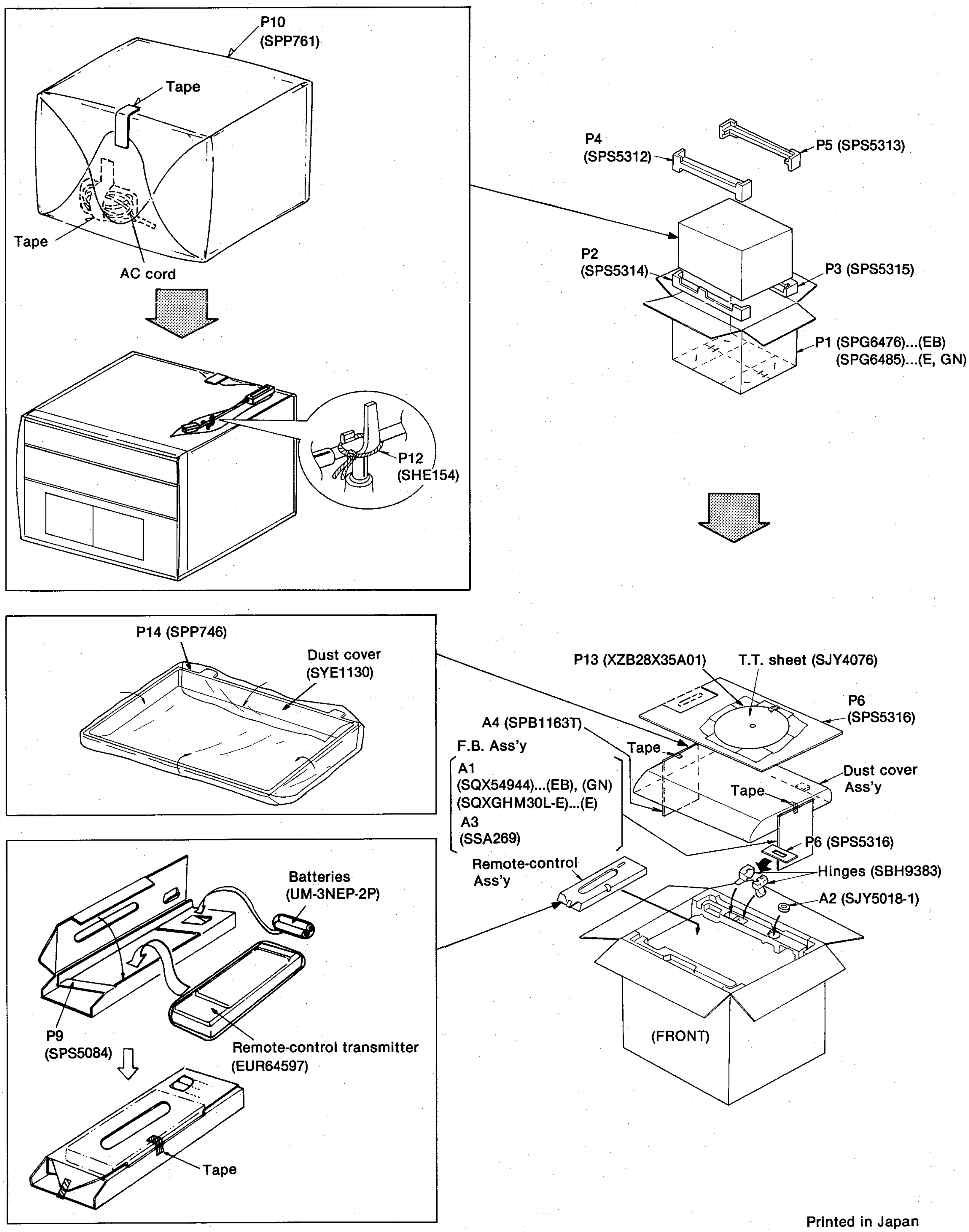
Ref. No.	Part No.	Values & Remarks
R912	ERDS2TJ331	1/4W 330
R913, 914	ERDS2TJ101	1/4W 100
R916-919	ERDS2TJ103	1/4W 10K
R920	ERDS2TJ562	1/4W 5.6K
R922	ERDS2TJ122	1/4W 1.2K
R923, 924	ERDS2TJ103	1/4W 10K
R925, 926	ERDS2TJ821	1/4W 820
R927	ERDS2TJ104	1/4W 100K
R928, 929	ERDS2TJ103	1/4W 10K
R930-935	ERDS2TJ331	1/4W 330
R936	ERDS2TJ222	1/4W 1.2K
R937	ERDS2TJ103	1/4W 10K
R938	ERDS2TJ104	1/4W 100K
R939-942	ERDS2TJ103	1/4W 10K
R997	ERDS2TJ103	1/4W 10K
R998	ERDS2TJ472	1/4W 4.7K
R999	ERDS2TJ221	1/4W 220
		CAPACITORS
C1	RCBS1H102KBY	50V 1000P 🄼
C2-4	RCBS1H3R3KCY	50V 3.3P
C5	RCBS1H180JLY	50V 18P
C6	RCBS1H181KBY	50V 180P
C7	ECBS1H1R0MLY	50V 1P
C8	RCBS1H5R6KCY	50V 5.6P
C9	RCBS1H102KBY	50V 1000P 🄼
C10	RCBS1H3R3KCY	50V 3.3P
C11	RCBS1H180JCY	50V 18P
C12	RCBS1H6R8KCY	50V 6.8P
C71	ECEA1HU3R3	50V 3.3U
C72	ECEA1CU220	16V 22U
C73	ECEA1HU010	50V 1U
C74	ECEA1CU470	16V 47U
C201, 202	ECKF1H103ZF	50V 0.01U
C204	RCBS1H181KBY	50V 180P
C205	ECKF1H103ZF	50V 0.01U
C206	ECFT1E104MD	25V 0.1U
C212	ECFT1E473KDY	25V 0.047U
C213	RCBS1H180JCY	50V 18P
C214	ECQP1471JZT	100V 470P
C218	ECKF1H103ZF	50V 0.01U
C219	ECEA50M1	50V 1U
C230	ECKF1H103ZF	50V 0.01U
C231	ECEA1CU100	16V 10U
C233	ECEA1HU010	50V 1U
C234	ECEA1CU100	16V 10U
C235	ECEA0JU101	6.3V 100U
C236	RCBS1H8R2KCY	50V 8.2P
C237	RCBS1H470JLY	50V 47P
C238	ECEA1EU4R7	25V 4.7U
C240	RCBC1H101KBY	50V 100P

Ref. No.	Part No.	Values & Remarks
C241	RCBS1C103MYY	16V 0.01U
C242, 243	ECKD1H223PF	50V 0.022U
C244	RCBS1C103MYY	16V 0.01U
C246	ECEA1HUR47	50V 0.47U
C248	ECEA1EU4R7	25V 4.7U
C251	ECEA1EU4R7	25V 4.7U
C252	ECEA1HU010	50V 1U
C253	ECEA0JU101	6.3V 100U
C254	ECQP1102JZT	100V 1000P
C255	ECEA1CU100	16V 10U
C256	ECKD1H223PF	50V 0.022U
C257, 258	ECFT1E183KDY	25V 0.018U
C259, 260	ECEA1EU4R7	25V 4.7U
C262	ECKF1H103ZF	50V 0.01U
C263	ECKT1H151KBY	50V 150P
C272	ECEA1CU330	16V 33U
C273, 274	RCBS1H150JCY	50V 15P
C276	RCBS1H102KBY	50V 1000P 🄼
C277	ECEA1CU330	50V 33U
C278	RCBS1H102KBY	50V 1000P 🄼
C279	RCBS1H181KBY	50V 180P
C280, 281	ECKF1H103ZF	50V 0.01U
C282	RCBS1H180JLY	50V 180P
C283	ECEA1HU3R3	50V 3.3U
C298	RCBS1C103MYY	16V 0.01U
C299	ECQP1391JZ	100V 390P
C301, 302	RCBC1H561KBY	50V 560P
C305, 306	ECFT1E822KDY	25V 8200P
C307, 308	ECEA1CU470	16V 47U
C309, 310	ECEA1EU4R7	25V 4.7U
C311, 312	ECEA1CU470	16V 47U
C313, 314	ECFT1E103KDY	25V 0.01U
C315	ECEA1EU4R7	25V 4.7U
C317, 318	ECKD1H122KB	50V 1200P
C319, 320	RCBS1H681KBY	50V 680P
C321	ECKF1H103ZF	50V 0.01U
C323, 324	ECFT1E822KDY	25V 8200P
C325, 326	ECEA1CU470	16V 47U
C327-329	ECEA1EU4R7	25V 4.7U
C330	ECKT1H103ZF	50V 0.01U
C331, 332	ECEA1CU470	16V 47U
C341, 342	RCBS1H820KBY	50V 82P
C343, 344	ECKT1H121KB	50V 120P
C345, 346	RCBS1H102KBY	50V 1000P 🄼
C347, 348	ECEA1HU010	50V 1U
C349, 350	ECFT1E272KDY	25V 2700P
C351, 352	ECEA1HSR33	50V 0.33U
C353-356	ECFT1E153KDY	25V 0.015U
C359, 360	ECKF1H103ZF	50V 0.01U
C402	ECQP1183JZT	100V 0.018U
C403	ECQP1472JZT	100V 4700P
C404	ECFT1E272KDY	25V 2700P

Ref. No.	Part No.	Values & Remarks
C408	ECEA1HU010	50V 1U
C435	ECEA1CU330	16V 33U
C438	ECEA1CU101	16V 100U
C498	ECFT1E104MD	25V 0.1U
C499	ECQP1272JZ	100V 2700P
C501, 502	RCBC1H120JCY	50V 12P
C511, 512	ECFT1E104MD	25V 0.1U
C513-515	RCBC1H470JLY	50V 47P
C521-524	ECEA1EU4R7	25V 4.7U
C525, 526	ECKF1H103ZF	50V 0.01U
C529, 530	ECFT1E333KDY	25V 0.033U
C531	ECEA1HSR33	50V 0.33U
C533	ECEA0JU101	6.3V 100U
C534	ECEA1CU100	16V 10U
C535, 536	ECEA1HSR33	50V 0.33U
C540	RCBC1H101KBY	50V 100P
C541	RCBC1H101KBY	50V 100P
C545	RCBC1H101KBY	50V 100P
C546	RCBC1H101KBY	50V 100P
C561, 562	ECEA1CK470	16V 47U
C563, 564	ECFT1E473KDY	25V 0.047U
C565, 566	ECEA1HKR68	50V 0.68U
C567, 568	ECFT1E153KDY	25V 0.027U
C569, 570	ECEA1HKR22	50V 0.22U
C571, 572	ECFT1E472KDY	25V 4700P
C573, 574	ECFD1E333KD	25V 0.033U
C575, 576	ECKD1H152KB	50V 1500P
C577, 578	ECFT1E223KDY	25V 0.022U
C579, 580	RCBC1H561KBY	50V 560P
C581, 582	ECFT1E822KDY	25V 8200P
C583, 584	RCBS1C152MXY	16V 1500P
C585-588	ECEA1EK4R7	25V 4.7U
C589, 590	ECEA1CKS100	16V 10U
C591, 592	ECFD1E333KD	25V 0.033U
C597, 598	RCBS1H181KBY	50V 180P
C599	ECFT1E392KDY	25V 3900P
C601, 602	ECEA1HU010B	50V 1U
C605, 606	ECEA1AU101	10V 100U
C607, 608	ECEA1CU470	16V 47U
C609, 610	ECEA1AU471	10V 470U
C611	ECEA1EU471B	25V 470U
C613, 614	ECFT1E104MD	25V 0.1U
C615	ECKF1H103ZF	50V 0.01U
C651, 652	ECEA1HU010	50V 1U
C653, 654	RCBS1H681KBY	50V 680P
C655, 656	ECEA1CU100	50V 10U
C661, 662	ECKF1H103ZF	50V 0.01U
C666	ECEA0JU101	6.3V 100U
C707-710	ECKF1H103ZF	50V 0.01U
C712	ECEA1ES332	25V 3300U
C713	ECKT1H682KB	50V 6800P
C714	ECEA1CU101	16V 100U

Ref. No.	Part No.	Values & Remarks
C718-721	ECEA1CU101	16V 100U
C723	ECKT1H682KB	50V 6800P
C724	ECEA1CU470	16V 47U
C725	ECEA1CU101	16V 100U
C727	ECKR2H103ZU	500V 0.01U
C728	ECKT1H682KB	50V 6800P
C729	ECEA1CU101	16V 100U
C730	ECEA1CU100	16V 10U
C731	ECEA1CU101	16V 100U
C732	ECEA1HU331B	50V 330U
C733	ECEA1VU100	35V 10U
C735	ECKR2H103ZU	500V 0.01U
C736	ECEA1HS102	50V 1000U
C737	ECEA1CU330	16V 33U
C739	ECKT1H682KB	50V 6800P
C740	ECEA1AU101	10V 100U
C741	ECEA1CU100	16V 10U
C750	ECQM1104KZW	100V 0.1U
C751	ECQM1H473JZ	100V 0.047U
C752	ECFT1E104MD	25V 0.1U
C753	ECFD1H104MDY	50V 0.1U
C755	RCBS1H331KBY	50V 330P
C756	RCBS1H331KBY	50V 330P
C901, 902	ECEA0JU102E	6.3V 1000U
C903	ECEA1HU010	50V 1U
C904	ECEA0JU101	6.3V 100U
C905	RCBS1H331KBY	50V 330P
C907	ECEA0JK221B	6.3V 220U
C908	RCBS1C103MYY	16V 0.01U
C910	RCBS1C103MYY	16V 0.01U
C911-913	ECEA1HK3R3	50V 3.3U
C914	ECEA1VK100B	35V 10U
C915	ECKF1H103ZF	16V 22U
C916	ECEA0JS102	6.3V 1000U
C917, 918	RCBS1H102KBY	50V 1000P 🄼
C919, 920	RCBS1C103MYY	16V 0.01U
C922	RCBS1H331KBY	50V 330P
C923	ECQV1H105JZ	50V 1U
C924	RCBS1H331KBY	50V 330P
C991	RCBS1C103MYY	16V 0.01U
C992	RCBC1H101KBY	50V 100P
C993	RCBS1C103MYY	16V 0.01U
C994	RCBC1H101KBY	50V 100P
C996	RCBS1C103MYY	16V 0.01U
C997	RCBS1C103MYY	16V 0.01U
C998	RCBC1H101KBY	50V 100P
C999	RCBC1H101KBY	50V 100P

PACKING


P10
(SPP761)
Tape
Tape
AC cord
P12
(SHE154)
P4
(SPS5312)
P5 (SPS5313)
P2
(SPS5314)
P3 (SPS5315)
P1 (SPG6476)...(EB)
(SPG6485)...(E, GN)
P14 (SPP746)
Dust cover
(SYE1130)
P13 (XZB28X35A01)
T.T. sheet (SJY4076)
P6
(SPS5316)
A4 (SPB1163T)
F.B. Ass'y
A1
(SQX54944)...(EB), (GN)
(SQXGHM30L-E)...(E)
A3
(SSA269)
Tape
Tape
Dust cover
Ass'y
P6 (SPS5316)
Remote-control
Ass'y
Hinges (SBH9383)
A2 (SJY5018-1)
Batteries
(UM-3NEP-2P)
P9
(SPS5084)
Remote-control transmitter
(EUR64597)
Tape
(FRONT)

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ORDER NO. AD8910319S8

Service Manual

Supplement

Stereo Music System

SG-HM30L

QUARTZ Synthesizer
MW/LW/FM Stereo Radio
with Double Cassette
Tape Deck and Record Player

Color

(K)...Black Type

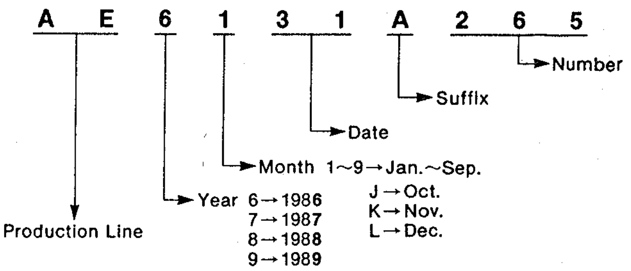
Area

Country Code	Area	Color
(E)	Continental Europe.	(K)
(EB)	Great Britain.	(K)
(GN)	Oceania.	(K)

Please file and use this supplement manual together with the service manual for Model No. SG-HM30L, Order No. AD8906191C8.

Note:
This supplement has been issued to inform you that the motor and rubber have been changed in units having serial number suffixes "B" or later. (Refer to "How to read the serial number" shown at right.)

- **How to read the serial number**



CHANGES

REPLACEMENT PARTS LIST

* Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components use only manufacturer's specified parts.
* [M] indicates parts that are supplied by **MESA.**

Ref. No.	Change of Part No.		Part Name & Description	Remarks
	ORIGINAL →	NEW		
CABINET AND CHASSIS				
62	MMNGD16–KM5	**RFKPGH10–K**	PHONO MOTOR	[M]
65	SHG1660	**RMG0088**	RUBBER	[M]
RESISTOR				
R744	ERDS1FJ271	**ERDS1FJ181**	C. RESISTOR, 1/2W, 180Ω	⚠

Panasonic

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Central P.O. Box 288, Osaka 530-91, Japan

Printed in Japan
K901009400MY